VEOLIA
ENVIRONMENTAL SERVICES
Technical and Engineering Division

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

WOODLAWN BIOREACTOR
AND
CRISPS CREEK INTERMODAL FACILITY

November 2013

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1. INTRODUCTION

1.1. Site Overview

Woodlawn Bioreactor (the Bioreactor) is owned and operated by Veolia Environmental Services (VES) and is located on Collector Road, approximately 7 kilometres west of Tarago in the NSW Southern Highlands. The Bioreactor forms an integral part of the Woodlawn Eco Project (the Eco Project Site), which covers an area of 6000 hectares (Appendix 1). Other existing and proposed site uses include aquaculture, horticulture, wind farm power generation and the proposed Mechanical Biological Treatment facility.

The Bioreactor occupies the void of a former open cut mine (the Woodlawn Mine) which has approximately 30 million cubic metres of airspace. Waste filling commenced in September 2004 and landfill gas has been actively collected for conversion into renewable energy at the onsite Woodlawn Bio Energy Power Station (the Power Station) since 2008.

This Annual Environmental Monitoring Report (AEMR) has been prepared in accordance with condition R1 of Environmental Protection Licence Number 11436 (EPL 11436) to detail the environmental performance of the Bioreactor relevant to the licence conditions.

VES also includes details of the Crisps Creek Intermodal Facility's (IMF) environmental performance under EPL 11455 which is in the second half of this AEMR. The Report refers to monitoring data submitted to the NSW Environment Protection Authority (EPA) as part of the 2012/2013 Annual Returns for both sites and covers the reporting period from 6 September 2012 to 5 September 2013.

1.2. Regulatory Requirements

The Bioreactor is operated under EPL 11436 which covers the operational areas of the Site, such as the remnant mine void and evaporation dams (Appendix 2), and also details the operating conditions and environmental monitoring requirements.

PART 1 EPL 11436 WOODLAWN BIOREACTOR

2. BIOREACTOR OPERATIONS

General Solid Waste (Putrescibles Waste and Non-Putrescibles Waste) is transferred to the Eco Project Site after being received at the Clyde Transfer Terminal (CTT), which is situated in Western Sydney. Waste is compacted into shipping containers for transport by rail to the IMF where the containers are unloaded and transported via trucks the remaining 8 kilometres to the Bioreactor. Additional regional waste outside the Sydney region is transported by road.

Waste is placed within the Bioreactor in progressive lifts of 5 – 10 metre (m) in thickness. Waste is tipped from the trucks in a specially designed Columbia Tipper, which extracts the trailer and container from the truck and tilts upwards until the waste falls out under gravity. The waste is then pushed into position and compacted, while the empty container and trailer are lowered and connected back to the truck. This section discusses compliance with EPL 11436 conditions.

2.1. Licence Conditions

2.1.1. Pollution of Waters

VES operates the Bioreactor site as a zero discharge site, where all contaminated water, which is rainfall or surface water run off that has come into contact with waste, is captured and managed onsite. To assist in minimising the amount of contaminated water to treat, VES have constructed and maintained drains and bunds to direct uncontaminated water away from contaminated areas. All water collecting on waste surfaces around the site are stored in dams for evaporation.

Under condition L1.3, no discharge of water from the Site is allowed except in a 1 in 100 year rainfall event over 72 hours. No water was discharged during this reporting period.

2.1.2. Waste

All waste received at the Bioreactor in this reporting period was General Solid Waste (Putrescible Waste and Non-Putrescible Waste), in accordance with condition L3, and was either transported from the CTT via the IMF or direct to the Bioreactor when sourced outside of Sydney. Waste generated onsite from administration of the site was disposed of in the Bioreactor as allowed by condition L3.2.

2.1.3. Noise Limits

Noise limits for the Bioreactor (condition L4.1) must not exceed 35 dB(A) $L_{Aeq\ (15\ minute)}$ at the nearest residential receiver. No noise complaints have been received since operations commenced in 2004. Therefore, no noise monitoring was undertaken during this reporting period. VES will implement a noise monitoring program in the event that a noise complaint is received.

2.1.4. Hours of Operation

Condition L5 required operational activities to be undertaken on Monday – Saturdays between 6:00am to 10:00pm. Approval from EPA was organised prior to VES operating outside these hours. VES has complied with the requirements of this condition.

2.1.5. Offensive Odour

22 odour complaints were received during this reporting period, which is about one third of the total odour complaints (64) received in the previous reporting period. VES is in constant communication with the local community and engaged an independent odour audit of the site during the previous reporting period. The odour audit identified odour sources at the site and recommendation actions for VES to minimise odours from these sources. The odour audit completed in the previous reporting period has identified that the highest odour emission source onsite was storage lagoon ED3N-1. During this reporting period, all odour causing liquid in ED3N-1 was treated through the on-site leachate treatment system which was commissioned onsite April, 2013. Further details on the leachate treatment system are provided in **Section 6**. VES will continue to implement other recommended actions and trials to investigate ways to minimise odours over the next reporting period.

VES has also continued the application of increased volumes of daily cover material and to increase the number of active extraction wells in the void to assist in odour management.

2.1.6. Competency of Operations

VES operates the IMF and Bioreactor under International Organisation for Standardisation (ISO) 14001 to ensure a high standard of environmental management. All licensed activities carried out in accordance with EPL 11436 (Condition O1) were carried out in a competent manner during this reporting period.

2.1.7. Maintenance of Plant and Equipment

All plant and equipment were maintained in proper order and serviced as required by qualified technicians. All VES operators hold the appropriate qualifications and licenses to operate plant and equipment used as part of Bioreactor operations.

2.1.8. Dust

All conditions specified in condition O3 have been complied with by VES. All access roads from the IMF to waste level within the Bioreactor are sealed surfaces. VES has also upgraded the haul road used for Bioreactor operations by applying a spray coated sealing layer in the previous reporting period. This initiative will further minimise dust generation from operational vehicle movements.

All waste loads transferred from the IMF to the Bioreactor are enclosed within containers.

Onsite mining of cover material was undertaken in accordance with the Mining Operations Plan to minimise dust generation. Minimal dust generation is confirmed by results of compliance dust monitoring, which is discussed further in Section 3.8.

2.1.9. Emergency Response

VES has developed a Pollution Incidence Response Management Plan (PIRMP), which forms part of the Emergency Response Plan (ERP) for the Woodlawn Bioreactor in accordance with EPL 11436 (Condition O4). A copy of the ERP is available on the premises and available electronically on VES' National Integrated Management System (NIMS), which is the online platform for storing policies, procedures and plans that VES adheres to. Relevant procedures that have been developed for the ERP are implemented on site as required.

2.1.10. Processes and Management

Surface water management systems have been implemented to ensure compliance with all conditions of O5. Drainage and pumping networks have been previously established to direct water to the required areas (condition O5.1 – O5.2). Stormwater collected within the void is pumped to Evaporation Dam 3 South for Bioreactor operations and dust suppression within the landfill void (O5.3 – O5.4).

The operation of mechanical evaporators is controlled by a wind direction sensor to prevent the drifting of sprayed liquids from the premises (condition O5.5).

All untreated leachate are treated at the Leachate Treatment System before transfer to ED3 (Evaporation Dam 3) (O5.6). Container wash water from the wash bay is used for dust suppression within the bioreactor. (O5.7)

The supervisory licence holder for the Woodlawn Bioreactor is Goulburn-Mulwaree Council. VES has granted the Council's representative access to the site and provided all requested documentation and records, including the annual return for this reporting period. All instructions provided by the Council's representative were complied with by VES (O5.8-5.11).

2.1.11. Waste Management

All conditions of O6 were complied with by VES during this reporting period. VES will submit a suitable closure plan 6 months prior to the closure date of the Bioreactor (O6.1).

Groundwater gradients indicate groundwater flows towards the void (condition O6.2) therefore negating outward movement of leachate beyond the landfill boundary. Improvements to the leachate treatment system were ongoing through the reporting period to optimise the system conditions for improved operational and environmental performance for storage and treatment of leachate (condition O6.3). All treated leachate is stored in Evaporation Dam 3 (ED3N-1, EDN3-2 & EDN3-3).

Clay lined barriers (condition O6.4 & O6.5) were installed on the southern portion of the void wall during the reporting period. The extent of the clay lined area is detailed in Appendix 3.

No liquid was imported into the landfill void during the reporting period, if required first flush waters collected at the Crisps Creek Intermodal Facility site, container washdown waters, and raw dam that have been approved by EPA, can be imported to the bioreactor (O6.6).

All cover material used onsite is sourced from the borrow pit area identified within the Woodlawn Mining Operation Plan (2004) and complies with conditions O6.7 - O6.11 VES is conducting an ongoing trial to use batch processing fines as an

alternative daily cover material, which is being conducted in consultation with the EPA. Report will be prepared in the next period in accordance with the trail of alternative cover material. Further discussion is provided in section 2.3.1.

All waste that is disposed and transferred from CTT is screened on receipt prior to transport to Woodlawn. Regional waste is screened onsite at the Bioreactor. VES has a waste screening and recording procedure (Appendix 4) that is followed to ensure that only the correct wastes are delivered to site under this EPL. (O6.12)

VES will undertake final capping of the Bioreactor when required and in accordance with condition O6.13.

VES operate the Bioreactor to maximise the production of landfill gas for generation of renewable energy at the Power Station Two flares are also installed, as back up, emissions treatment.. A fifth landfill gas generator was installed and commissioned in March 2013 (condition O6.14) to increase the capacity of the Power Station to five Megawatts (MW). VES has submitted all manufacturers' specification for landfill gas generators and flares to the EPA for approval. The flare and generators meet the design requirements detailed in conditions O6.15 and O6.16. All pipe work used in the gas collection network are designed to withstand pressures associated with bioreactor operations (O6.20)

VES constructs temporary access roads on the waste surface to minimise contact with waste. VES also has a number of dedicated site vehicles that only operate within the void and other operational areas. For vehicles exiting the facility a dedicated wheel wash facility is located outside the landfill void (O6.22)

2.1.12. Other Operating Conditions

No drill holes were required to be sealed during this reporting period. (O7.1)

Sealing of the South Western portal was ongoing at the end of the reporting period in accordance with Conditions O7.2, the design for which was approved by the EPA. Details of the works undertaken have been provided to the EPA in a separate report, which will be provided to EPA in the next reporting period.

A Design and Construction Report for sealing of the South Western Portal has been submitted and approved

2.2. Complaints

VES operates a 24 hour telephone complaints line that enables the receipt of complaints from members of the public, as required by condition M6. Other complaints that were received off site were logged by Goulburn-Mulwaree Council and the EPA. VES recorded a total of 22 complaints (refer to Table T-1) relating to odour during this reporting period. Upon receipt of a compliant, VES recorded all details into the site complaints register as required under condition M5.

VES encourages local residents to voice their concerns with the Site and also at the Community Liaison Committee Meetings. VES have commenced activities to eliminate and minimise odour sources at the site based on the odour audit completed during the reporting period as discussed in Section 2.1.5.

2.3. Pollution Reduction Programs

2.3.1 Trail of Alternative Daily Cover

VES applied to EPA to use recovered fines as an alternate cover material from Construction and Demolition waste. VES has started the trail on April 2012 and concluded the trial on this reporting period. This involved blending the processed fines with Virgin Extracted Natural Material (VENM) sourced onsite (U1.3). A report including detailed outcomes is required (U1.4) to be completed in the next reporting period. VES is continued to utilise Concover and soil material sourced from borrow areas identified in the MOP as required during this reporting period.

2.3.2 ED3N-1 Leachate Management

During this reporting period, all of leachate in ED3N-1 were removed and treated through the treatment system. VES was not able to remove all of the leachate by 30th of June 2013 as the biological treatment being implemented on site required an adequate amount residence time to treat all leachate to a preferable quality. All the remaining leachate in ED3N-1 has been removed and treated at the end this reporting period. (U2.1) Monthly monitoring was conducted for all Evaporation Dams (ED3N-1, ED3N-2 and ED3N-3) to ensure an alkaline state was maintained (U2.2). A report has also been submitted to EPA demonstrating the water quality parameter

and odour emission value of ED3N-1 in relation to other Evaporation Dams (ED3N-2 & ED3N-3) during the reporting period. (U2.3)

3. ENVIRONMENTAL MONITORING

3.1. Monitoring Points

VES is required to monitor environmental performance under EPL 11436. Table 3.1 details the VES monitoring point identification, EPL monitoring point identification number, frequency and the type of monitoring undertaken at each licensed point. A monitoring location plan is included in Appendix 5.

Table 3.1: Licensed Monitoring Points

EPA ID	VES ID	Frequency	Type of Monitoring
1	GMBH1	Quarterly	Subsurface Gas
2	GMBH2		
4	GMBH4		
5	Gas Extraction Booster	Annual	Landfill Gas Input
6	Landfill Surface	Quarterly	Surface Gas
7	Landfill Gas Flare	Annual / Continuous	Air Discharge
8	Landfill Gas Engine Exhaust Point – Gen 1	Annual	Air Discharge
9	Meteorological Station	Continuous	Meteorological
10	DG28 – Pylara	Monthly	Particulates – Deposited Matter
11	DG22		
12	DG24		
13	Site 115 – Allianoyonyige Creek	Quarterly	Surface Water
14	Spring 2 – Crisps Creek		
15	Site 105 – Crisps Creek		
16	WM200 – RWD		
17	WM201 – ERC		
18	WM202 – ED3S		
19	WM203 – ED3N		
21	Pond 2 (Decommissioned)		
22	Pond 3		
23	Leachate Pond	Annual	Leachate
24	Leachate Recirculation System		
25	MB1	Quarterly / Annual	Groundwater
26	MB2		
27	MB3		
28	MB4		
29	MB5		
30	MB6		
31	MB7		
32	MB8		
33	MB10		
34	MB11		
35	MB12		
36	MB13		

EPA ID	VES ID	Frequency	Type of Monitoring
37	MB14		
38	MB15	Quarterly / Annual	Groundwater
39	MB16		
40	MB17		
41	ED3B		
42	WM1		
43	WM3 (Decommissioned)		
44	WM4		
45	WM5		
46	WM6		
47	WM7 (Decommissioned)		
48	P38A & P38B	Quarterly	Standing Water Level
49	P44A & P44B		
50	P45A & P45B		
51	P58A & P58B		
52	P59A & P59B		
53	P100A & P100B		
54	ED3	Monthly	Storage Volume
55	MW8S	Quarterly / Annual	Groundwater
56	MW8D		
57	MW9S		
58	MW10S		

All monitoring data collected at the monitoring points identified in Table 3.1 during this reporting period has been tabulated. Graphs of data collected have been developed (refer to Figures) to assist in the assessment of trends and variability of the monitoring results.

Trend graphs of water quality indicators are consistent with the graphs generated by VES from previous versions of the AEMR.

3.2. Subsurface Gas Monitoring

Monitoring of three subsurface gas monitoring locations, namely GMBH1, GMBH2 and GMBH4 (Table 3.1) were undertaken quarterly as per EPL requirements (condition M2.2). No methane was detected in subsurface gas monitoring locations during this reporting period. These results are consistent with results from the past three years.

The results show that the gas collection network is effectively capturing and controlling landfill gas within the Bioreactor. Engineered impermeable barriers and the natural subsurface of the void wall also minimise the potential movement of

landfill gas from the Bioreactor, allowing for maximum extraction through the gas collection system.

3.3. Landfill Gas Extraction Booster Monitoring

During the last reporting period (October 2011), it was discovered that the results obtained for the Landfill Gas Extraction Booster were incorrect. The monitoring meter at this sample point was fixed by Clark Energy and the data reported is now consistent to the historical average since 2008 as shown in Table T-3a below:

(Table T-3a).

Parameter	Historical Average	Current Result
Temperature (^{o}C)	32.2	25.2
Volumetric Flow (m^3/hour	2124.0	1126.5
Methane (%)	61.4	53.5

3.4. Surface Gas Monitoring

Surface gas monitoring was completed on a quarterly basis as per EPL 11436 requirements. Due to the sampling methodology for surface gas monitoring only tabulated data for this reporting period is provided (Table T-4). Methane was detected in varying amounts over the waste surface with an overall average of 0.02 % during this reporting period which was comparable to 0.03% from the previous reporting period.

The emission threshold concentration for Methane detected in surface gas emission testing is 500 parts per million (0.05%) as recommended in Benchmark Technique 17 (Environmental Guidelines for Solid Waste Landfills, January 1996).

A single outlier of 0.58 % was recorded as the highest methane in December 2012, this could be attributed to increased temperatures and settlement cracking in the landfill surface creating a preferential pathway.

Site Management investigated and applied corrective actions which included application and maintenance of cover material, commissioning and rebalancing of gas extraction wells and installation of new gas collection infrastructure.

3.5. Landfill Gas Flare Monitoring

The landfill gas flares are manufactured to a residence time of 0.3 seconds with a destruction efficiency of 98% for methane and non methanogenic organic compounds. Temperature is monitored continuously and an annual reading of 1090 ℃ was recorded (Table T-5), which met the requirements of condition O6.15 of the EPL.

3.6. Landfill Gas Engine Exhaust Point Monitoring

Monitoring of the landfill gas engines exhaust points was completed annually for each active generator. VES operated five generators at the Power Station during the reporting period. One monitoring point (Generator 1) was required by the EPL licence 11436. Due to unavailability of Generator 1 when monitoring conducted on June 2013, other Gas Engines were measured and the results were consistent to the previous monitoring period. All of the Landfill Gas Engine Exhaust Point results (Generator 2, 3, 4 & 5) are presented in Table T 6.1 – T 6.5.

Concentration limits for each exhaust point are specified within condition L2.4 of the EPL. All monitoring results were below the specified concentration limits for the following pollutants:

- Nitrogen Oxides,
- Hydrogen Sulphide,
- Sulphuric Acid Mist and
- Sulphur Trioxide.

Trend graphs of the listed pollutants have been generated (Figures 1 – 4). The graphs indicate that the concentration of the pollutants were consistent with levels previously recorded. Hydrogen sulphide emissions at Generator 2 have decline to the background level (0.35mg/L) in this reporting period compared to the slight increase noted in the last reporting period. In terms of Nitrogen Oxides, the emission level for all engines (Generator 2, 3, 4, 5) that were tested this year have reduced to lower levels compare to the last reporting period.

3.7. Meteorological Station

VES operates a meteorological station to continuously monitor climatic data listed in condition M4.1 of the EPL. Meteorological data recorded includes (but is not limited to):

- Wind speed at 10m;

- Wind direction at 10m;
- Temperature at 2m;
- Temperature at 10m;
- Rainfall;
- Solar radiation; and
- Sigma theta at 10m

Meteorological data is logged in 15 minute and 24 hour intervals and can be made available for the 2012/2013 reporting period upon request. Servicing and calibration of the meteorological station is carried out quarterly by Hydrometric Consulting Services..

3.8. Particulates/Dust Monitoring

Monitoring of three depositional dust gauges (refer to Table 3.1) was completed on a monthly basis as required under the EPL 11436 (P1.1). Results are tabulated in Tables T7.1 – T7.3 and trend graphs are provided as Figure 4.

The maximum dust level recorded in this reporting period was 14.1 g/m^2/month (September 2012) at DG22, located east of the landfill void, which was significantly lower than the highest dust level (31.1g/m^2/month) in the previous monitoring period. This dust level can be attributed to the rehabilitation work that was being undertaken between August and September 2012 by subcontractors in the vicinity of the monitoring location.

Dust levels at DG24, located west of the landfill void along the haul road, did not reflect a significant increase during this reporting period which is a measure of the effectiveness of the dust control measures that site have in place.

Dust levels recorded in DG28, which is sited at the VES owned property of Pylara, were consistent with historical trends. This site is utilised by VES to allow identification of non Bioreactor operational activities that may be the source of dust generation in the area.

3.9. Surface Water Monitoring

Water quality monitoring of nine surface water locations (refer to Table T8.1 – T8.9) is required under EPL 11436. Surface water quality graphs have been developed to identify key pollutants trends from Bioreactor operations which include: pH, conductivity, ammonia, total organic carbon, iron, sulphate and zinc. .

3.9.1. Site 115 – Allianoyonyige Creek

Site 115 is situated downstream of the evaporation dams. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.1 and Figure 5).

pH is relatively consistent throughout the monitoring period and indicates alkaline water at an average pH of 7.4. Conductivity ranges from 246 – 3880 µS/cm which indicates fresh to brackish water, while heavy metal concentrations are less than 0.1mg/L. This indicates that no contaminated runoff is impacting surface water at this monitoring location.

Ammonia (average 0.1mg/L) and Total Organic Carbon (average 18 mg/L) concentrations recorded in this monitoring period are consistent with historical monitoring results

Trends at this location indicate variable conductivity and relatively stable iron concentrations during this reporting period, both results being consistent with historical monitoring results. Variability is likely due to dilution during wet periods and evapo-concentration during drier periods as historically identified (Earth2Water, 2010).

3.9.2. Spring 2

Spring 2 is located upstream of the Bioreactor and is adjacent to Crisps Creek. This location naturally overflows to Crisps Creek in wet weather events. Quarterly monitoring events were undertaken in accordance with EPL conditions. This point provides background water quality information (refer to Table T8.2 and Figure 6).

Water quality trend in Spring 2 is consistent with water quality from historical monitoring results. pH is almost neutral (average 7.07), with conductivity (average 670.2µS/cm) indicative of fresh water. Sulphate (average 180mg/L) shows an identical trend to conductivity indicating that the concentration of Sulphate may have a direct affect on conductivity. Zinc concentrations (average 9.60mg/L) continue to slowly decline, although variability is still common due to dilution following wet weather periods and concentration during drier periods.

Ammonia (average 0.58mg/L) and Total Organic Carbon (average 19mg/L) concentrations recorded in this monitoring period were consistent with historical monitoring results.

3.9.3. Site 105 – Crisps Creek

Site 105 is located downstream of the Bioreactor and tailings dams. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.3 and Figure 7).

Water quality trends in Site 105 are consistent with previous monitoring results. pH ranges from (6.29 – 7.76) while conductivity (average 3460 µS/cm) reflects brackish water. Sulphate levels ranged from 50 – 240mg/L and generally followed a similar trend to conductivity. These results indicate that runoff from contaminated areas is not impacting water quality at this location.

Total Organic Carbon (average 17.83mg/L) and Ammonia (average 0.1 mg/L) were consistent with historical trends.

3.9.4. WM200 – Raw Water Dam

The Raw Water Dam is located to the west of the dolerite stockpile and collects uncontaminated water. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.4 and Figure 8).

pH (average 6.24) indicates slightly acidic water, while conductivity (average 1320 µS/cm) is showing a slight increasing trend since the last monitoring period (average 1275uS/cm) and is indicative of fresh/brackish water. Sulphate levels was consistent with previous trends, while Zinc and Iron levels have reflected a slight rising trend to 52mg/L and 0.78mg/L through the monitoring period. VES are currently investigating the cause of increasing Zinc and Iron trends.

Total Organic Carbon was an average of 10.6 mg/L in this reporting period compared to 10.25mg/L from the last reporting period. While this was a gradual rising trend, it is relatively consistent with historical results. Ammonia was not detected during this reporting period.

3.9.5. WM201 – Entrance Road Culvert

The Entrance Road Culvert collects surface water runoff from the Woodlawn administration and workshop areas. Five monitoring events were undertaken (refer to Table T8.5 and Figure 9) during this monitoring period. .

pH shows a gradual rise to 6.5 from previous results, while conductivity (average 300µS/cm) indicates fresh water. Iron (average 0.35mg/L), Zinc (average 9.17mg/L) and Sulphate (124.7mg/L) concentrations were variable but consistent with previous trends. Ammonia was below the detection limit (<0.1mg/L) during this reporting period.

3.9.6. WM202 – Evaporation Dam 3 South

Evaporation Dam 3 South is a storage point to manage stormwater from the void by evaporation. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.6 and Figure 10).

Water quality results are very similar to previously reported data and indicate acidic water (average pH of 2.9), Iron (average 69mg/L), Zinc (average 465mg/L), with slightly increased level of Sulphate (average 4875mg/L) and Conductivity (average 6500µS/cm). Sulphate and conductivity do indicate a slight fluctuation trend over this reporting period. These concentrations reflect the Acid Mine Drainage (AMD) contaminated waters from remnant mining operations stored in Evaporation Dam 3 South.

Ammonia concentrations appear to be stabilising with a smaller range (33 – 70mg/L) identified during this reporting period.

3.9.7. WM203 – Evaporation Dam 3 North

Evaporation Dam 3 North is a storage point to manage AMD/leachate by evaporation. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.7 and Figure 11).

Water quality results indicate WM203 stores acidic water (pH 4.2-4.8), while conductivity (average 17200µS/cm) and sulphate (average 9800mg/L) has dropped compare to conductivity (average 18500µS/cm) and sulphate (average 11625mg/L) in the previous reporting period. Iron levels fluctuated (5.9 - 34mg/L) but Zinc levels were relatively stable (410 – 550mg/L) which is consistent with previous trends. These concentrations reflect the AMD contaminated waters stored in Evaporation Dam 3 North.

Ammonia (470 – 660mg/L) and Total Organic Carbon (220 – 260mg/L) concentrations showed a declining trend over the reporting period, although levels were consistent with historical trends.

3.9.8. Pond 2

Pond 2 was decommissioned in January 2011 and this sampling point no longer exists. Refer to the 2011 AEMR for the last results and trends obtained at this monitoring location (VES, 2011).

3.9.9. Pond 3

Pond 3 is situated on a bench within the landfill void at a relative level (RL) of 740 m above sea level. Pond 3 acts as a transfer point to capture stormwater from the walls

of the void to Evaporation Dam 3. Quarterly monitoring events were undertaken in accordance with EPL conditions (refer to Table T8.8 and Figure 13).

All water quality results indicate were consistent with previous monitoring results. Water quality results indicate acidic water pH (2.7 – 4.1) with variable conductivity (3200 – 7000µS/cm). Sulphate (2500 – 5600mg/L) and Iron (61 – 240mg/L) was variable, but the average has slightly decreased throughout the reporting period. Ammonia (25 – 120mg/L) and Total Organic Carbon (11 – 190mg/L) were also quite variable.

VES believe that the monitoring results and trends recorded from Pond 3 indicate that monitoring from this location is sufficient to be representative of determining stormwater quality captured from the walls of the void.

3.9.10. Leachate Monitoring

Leachate quality monitoring at two monitoring locations (refer to Tables T9.1 – T9.2) was undertaken as required by EPL 11436. The key quality indicators selected for leachate that would assist in contamination assessment at other water monitoring locations included: pH, Ammonia, Zinc, Aluminium, Sodium, Total Petroleum Hydrocarbons and Phenolic compounds. While Benzene, Toluene, Ethylene, Xylene (BTEX) and organic pesticides have been analysed for, based on the signature of the leachate in the void and the type of waste inputs, VES believe that these are not key indicators.

3.9.11. Leachate Pond

The leachate pond is located at the northwest rim of the void where leachate is treated by aeration to oxidise organic compounds. An annual monitoring round was completed during this reporting period, which meets the requirements of the EPL. (refer to Table T9.1 and Figure 14).

The characteristics of the leachate are:

- The pH is alkaline at 8.8 compare to the pH reading at 7.9 from the last reporting period. Bicarbonate is (5170 mg/L) the prominent form of alkalinity has dropped from 9710mg/L (last reporting period) to 5170mg/L on this reporting period;
- The level of Ammonia has dropped from 1800mg/L (last reporting period) to 270mg/L on this reporting period. Total Dissolved Solids has also dropped from 31,000mg/L to 18000mg/L through the reporting period. Total Organic Carbon has dropped from 13,000mg/L to 2900mg/L from the previous

reporting period. These measurements are expected to be within the quality of putrescible waste leachate;

- Levels of Zinc (0.79mg/L) and Conductivity (23000µS/cm) are present in the leachate which indicates minor AMD mixing;
- Aluminium (0.1mg/L) is the most abundant heavy metal not attributed to mining related activities. Other heavy metals are less than 1mg/L.
- Sodium (3000mg/L) and Potassium (2000mg/L) are the dominant cations, while Sulphate (1600mg/L) and Chloride (4700mg/L) are the dominant anions;
- Total Petroleum Hydrocarbons are present at all fractions.
- Pesticides (Organo-phosphorous (OP) and Organo-chlorine (OC) and Polycyclic Aromatic Hydrocarbons were below laboratory detection limits;
- Trace amounts of Toluene (<0.002mg/L) and Xylene (<0.002mg/L) previously detected were not detected during this reporting period;
- Phenolic compounds (<0.05mg/L) were not detected during this reporting period.

3.9.12. Leachate Recirculation System

The leachate recirculation system is located within the void and acts to extract leachate from saturated waste and filter through drier waste. An annual round was completed during this reporting period, which meets the requirements of the EPL (refer to Table T9.2 and Figure 15).

The leachate characteristics are similar to the leachate pond, with the following exceptions:

- Total Organic Carbon (3400mg/L) showed a trend compare to the last reporting period (3100mg/L).
- Sulphate (62mg/L) has also shown a consistent level compare to the previous monitoring data (51mg/L).
- Zinc (0.56mg/L) was one order of magnitude lower than the previous annual measurement at 6.8mg/L which also indicating a decreasing trend
- BTEX were not detected on this monitoring period compare to the low levels (<0.077mg/L) in the last monitoring period.

3.10 Groundwater Monitoring

Groundwater quality monitoring at 27 locations (refer to Table T10.1 – T10.25) was undertaken as required by EPL 11436. One annual round and three quarterly rounds of monitoring are required to meet the requirements of the EPL.

The groundwater monitoring well network allows for an assessment of potential impacts from the Bioreactor, evaporation dams and tailing dams and are based on determining if the key indicators selected for the above pollutants are detected in groundwater samples. Pesticide (OP and OC) and Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) results for all groundwater monitoring locations were below laboratory detection limits.

3.10.1 MB1

MB1 is located down gradient of the void. The standing water level in MB1 is about 771 m RL on this monitoring period, which is consistent to the long term average standing water level (769.47 m RL) at MB 1 since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.1 and Figure 17) in MB1 indicate a Calcium-Sulphate water type with near neutral pH (average 7.4) and conductivity (average 1136µS/cm) representative of fresh water. These results are consistent with previously reported trends.

Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAH) and BTEX were not detected at this monitoring point. All heavy metals were significantly less than 1mg/L. Lead has shown an increasing trend (0.19mg/L) on this monitoring period, but it was measured as Total Lead rather than Dissolved Lead.

Ammonia (maximum 0.1mg/L) and Total Organic Carbon (6mg/L) are present at low levels which reflect natural conditions.

All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.2 MB2

MB2 is located upstream of evaporation dam 2. The standing water level in MB2 is about 779 m RL on this monitoring period which is consistent to the long term standing water level (778.47 mRL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.2 and Figure 18) in MB2 indicate a near neutral pH (average 6.95) and stable conductivity (average 6650µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX were not detected at this monitoring point. All heavy metals were significantly less than 1mg/L.

Ammonia was not detected (<0.1mg/L) during this reporting period. Total Organic Carbon (5mg/L) is present at low levels which reflect natural conditions.

All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.3 MB3

MB3 is located upstream of the Bioreactor and mine site. The standing water level in MB3 is 790.79 m RL at this monitoring period and is consistent to the long term standing water level (790.48 m RL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.3 and Figure 19) in MB3 indicate near neutral to neutral pH (average 7.2) and stable conductivity (average 2005.5µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX were not detected at this monitoring point. All heavy metals were significantly less than 1mg/L.

Ammonia was not detected (<0.1mg/L) during this reporting period. Total Organic Carbon (6 mg/L) is slightly higher than the previous reporting period (1mg/L) but is present at low levels which reflect natural conditions.

All trends indicate fairly stable concentration and provide an indication of background groundwater concentrations.

3.10.4 MB4

MB4 is located downstream of the Bioreactor. The average standing water level in the monitoring period is about 775 RL and this is consistent for the long term standing water level (774.47 RL) at MB4 since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.4 and Figure 20) in MB4 indicate acidity (average pH 6.1) and conductivity (average 1692µS/cm) representative of freshwater. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. All heavy metals are less than 1mg/L. There is a slight increase of lead concentration 0.012 mg/L on this monitoring period compare to the last monitoring period 0.00048 mg/L, but this might be due to total lead was measured instead of dissolved lead. This is also lower than the historical average at 0.01 mg/L since 2010.

Ammonia (less than 0.1mg/L) was below the limit during this reporting period. Total Organic Carbon (2mg/L) is present at low levels which reflect natural conditions.

All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analytes tested during this monitoring period.

3.10.5 MB5

MB5 is located upstream of the western tailings dam at the waste rock dump area. The standing water level in MB5 was about 828.08 m RL during this monitoring period and is consistent to the average long term standing water level (828.12 m RL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.5 and Figure 21) in MB5 indicate acidic pH (average pH 4.13) and conductivity (average 7940µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. All heavy metals are less than 1mg/L, with the exception of Aluminium (20mg/L). Manganese (30mg/L),and Zinc (202.5mg/L), although these levels are consistent with previously reported trends.

Ammonia (0.1mg/L) and Total Organic Carbon (6mg/L) are present at low levels which reflect natural conditions.

All trends indicate fairly stable concentration and there is no indication of contamination Bioreactor activities. There is indication of impacts from mining activities at this monitoring location although this has been ongoing prior to VES obtaining the site. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.6 MB6

MB6 is located downstream of the Evaporation Dam 3 and upstream of the Bioreactor. The standing water level in MB6 has been on a gradual increasing trend from 786RL to 789RL since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.6 and Figure 22) in MB6 indicate acidic pH (average pH 5.7) and conductivity (average 5023µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH and BTEX have not been detected at this monitoring point. PAH was detected at 0.0005mg/L which is minimal. All heavy metals are less than 1mg/L with the exception of Zinc (average 9.9mg/L) which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (3mg/L) is present at low levels which reflect natural conditions.

There is no defined indication of contamination from mining or Bioreactor activities at this monitoring location. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.7 MB7

MB7 is located upstream of Evaporation Dam 3. The standing water level in MB7 was 789.04 m RL on this reporting period, which has shown some minor fluctuations over time compare to the long term average (787.19 m RL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.7 and Figure 23) in MB7 indicate near neutral (average pH 6.98) and conductivity (average 8832.5µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. All heavy metals are less than 1mg/L with the exception of Manganese (1.1mg/L) and zinc (average 2.31mg/L) in this monitoring period. There was an increasing trend of zinc between September 2012 – January 2013 in this monitoring period, but the concentration level has dropped to a level which was consistent to the previous trends at the end of this monitoring period.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (13mg/L) levels have increased which appears to be an anomalous result. Further monitoring is required to determine if this occurrence continues.

All trends indicate fairly stable concentration and there is no indication of contamination from mining or Bioreactor activities. The only significant anomaly recorded was Total Organic Carbon, which was higher than the historical average level (8.3mg/L), but has dropped significantly since the last reporting period (22mg/L).

3.10.8 MB8

MB8 is located downstream of the Bioreactor at the Pylara residence. The standing water level in MB8 was recorded as 748.4 m RL and is consistent with the long term average (748.5 m RL) since 2004 (refer to Figure 16.1). This groundwater well has lower groundwater levels (along with MB13) than the majority of other bores monitored at the site (approximately 20m lower than other locations).

Water quality results (refer to Table T10.8 and Figure 24) in MB8 indicate a Sodium-Chloride water type which is slightly alkaline (average pH 7.3) and conductivity (average 3546.7µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. All heavy metals are less than 1mg/L which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (7mg/L) is reduced from last reporting period (12mg/L).

All trends indicate fairly stable concentrations with the exception of Lead concentration. This may due to that Total Lead was measured instead of Dissolved Lead There is no indication of contamination from mining or Bioreactor activities.

3.10.9 MB10

MB10 is located adjacent to Evaporation Dam 1. The standing water level in MB10 was 781.13 m RL during this monitoring period and is consistent to the long term level since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.9 and Figure 25) in MB10 indicate a water type which is slightly alkaline (average pH 7.08) and conductivity (average 7437.5µS/cm) representative of brackish water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. All heavy metals are less than 1mg/L which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (4mg/L) is present at low levels which reflect natural conditions. Sulphate was measured with a low level at 34mg/L and has increased back to the normal level at 3900mg/L at the end of the monitoring period.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.10 MB11

MB11 is located at Evaporation Dam 2 seepage collection trench, which is a dedicated capture area for seepage waters. The standing water level in MB11 was measured as 779.88 m RL during the monitoring period and the standing water level has been fairly stable around 777RL since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.10 and Figure 26) in MB11 indicate a water type which is acidic (average pH 3.8) and conductivity (average 34400µS/cm) representative of saline water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. A number of heavy metals are greater than 1mg/L including Aluminium (710mg/L), Cadmium (36mg/L), Cobalt (19mg/L), Copper (average 161mg/L), Manganese (730mg/L) and Zinc (5150mg/L). Heavy metal concentrations fluctuate greatly between sample rounds which reflect concentrations within seepage water from the dam. Seepage from this dam has been ongoing since VES assumed responsibility for the site and there is no indication of increasing trends. VES are managing the water volume in Evaporation Dam 2 by promoting evaporation and limiting inputs to rainfall to minimise the volume of seepage at this location.

Ammonia (average 0.2mg/L) is present at low levels which reflect natural conditions. Total Organic Carbon (21mg/L) is similar to previous levels and indicates that organic carbon is present in this location. Fluoride (170mg/L) is also present at high levels. Due to the location of the bore, and the proximity away from the bioreactor, these results are likely influenced by microbial communities rather than Bioreactor activities.

The location of this MB11 is between evaporation dam 2 and the seepage collection trench. VES have previously installed two additional monitoring wells (MB19 and MB20) downgradient of the seepage collection trench. Monitoring results from these wells continue to indicate that contamination is managed at the seepage collection trench. Results of these wells have been tabulated and provided in Appendix 6.

The evaporation dams have been previously identified by VES for rehabilitation which will be undertaken in accordance with the MOP.

3.10.11 MB12

MB12 is located at Evaporation Dam 2 seepage collection trench and adjacent to MB11. The standing water level in MB12 reflects water levels (778.04mg/L) and trends in MB11 (refer to Figure 16.1).

Water quality results (refer to Table T10.11 and Figure 27) in MB12 indicate a water type which is acidic (average pH 3.53) and conductivity (average 39,750µS/cm) representative of saline water. These results are consistent with previously reported trends.

TPH, PAH and BTEX have not been detected at this monitoring point. A number of heavy metals are greater than 1mg/L including Aluminium (1100mg/L), Cadmium (41mg/L), Cobalt (25mg/L), Copper (245mg/L), Manganese (740mg/L) and Zinc (average 6450mg/L). Heavy metal concentrations generally fluctuate similar to MB11, although Zinc concentrations show a slight rising trend.

Ammonia (average 0.45mg/L) is present at low levels which reflect natural conditions. Total Organic Carbon (22mg/L) is similar to levels in MB11. Fluoride (140mg/L) is also present at high levels. Due to the location of the bore, and the proximity away from the bioreactor, these results are likely influenced by microbial communities rather than Bioreactor activities.

The location of MB12 (similar to MB11) is between Evaporation Dam 2 and the seepage collection trench. Refer to Appendix 6 for results of groundwater down gradient of the seepage collection trench.

The evaporation dams have been previously identified by VES for rehabilitation which will be undertaken in accordance with the MOP.

3.10.12 MB13

MB13 is located downstream of Evaporation Dam 1 and surface water monitoring point 115. The standing water level in MB13 at this monitoring period was measured as 746.09 m RL and is comparable with the levels in MB8 (refer to Figure 16.1).

Water quality results (refer to Table T10.12 and Figure 28) in MB13 indicate a water type which is slightly alkaline (average pH 7.4) and conductivity (average 3493µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L. Ammonia (less than 0.1mg/L) was not detected during this reporting

period. Total Organic Carbon (9mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.13 MB14

MB14 is located upstream of Evaporation Dam 2. The standing water level in MB14 is 784.49 m RL which is consistent to the long term level recorded (782.87 m RL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.13 and Figure 29) in MB14 indicate a Magnesium-Sulphate water type which is slightly alkaline (average pH 7.5) and conductivity (average 2303µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (5mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

All trends indicate fairly stable concentrations and there is no indication of contamination from Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.14 MB15

MB15 is located downstream of the waste rock dam. The average standing water level in MB15 is 762.79 m RL in this reporting period and is consistent to the long term standing water level (764.55 m RL) since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.14 and Figure 30) in MB15 indicate a water type which is near neutral (average pH 7) and conductivity (average 8097µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L, with the exception of Manganese (4.7mg/L) which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (6mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

All trends indicate fairly stable concentrations, although Iron concentrations fluctuate over time. The waste rock area has been previously identified by VES for rehabilitation which will be undertaken in accordance with the MOP. There is no indication of contamination from Bioreactor activities.

3.10.15 MB16

MB16 is located downstream of the waste rock dam. The average standing water level in MB16 is 768.87 m RL in this reporting period, which is consistent to the long term average (768.9 m RL) since 2004. (refer to Figure 16.1)

Water quality results (refer to Table T10.15 and Figure 31) in MB16 indicate a water type which is acidic (average pH 3.17) and conductivity (average 33067µS/cm) representative of saline water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. A number of heavy metals are greater than 1mg/L including Aluminium (2200mg/L), Cobalt (23mg/L), Copper (average 163mg/L), Iron (average 41.5mg/L), Manganese (3420mg/L) and Zinc (average 6533mg/L). Heavy metal concentrations are variable but consistent with previously reported trends.

Ammonia (average 7.63mg/L) and Total Organic Carbon (35mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

The waste rock area has been previously identified by VES for rehabilitation which will be undertaken in accordance with the MOP. There is no indication of contamination from Bioreactor activities.

3.10.16 MB17

MB17 is located downstream of the waste rock dam. The average standing water level in MB17 is 766.98 m RL in this monitoring period and is consistent to the long term average 767.12 m RL since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.16 and Figure 32) in MB17 indicate a water type which is slightly acidic (average pH 7.08) and conductivity (average

10800µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L with the exception of Manganese (15mg/L) and Zinc (average 8mg/L) which is consistent with previously reported trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (10mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

The waste rock area has been previously identified by VES for rehabilitation which will be undertaken in accordance with the MOP. There is no indication of contamination from Bioreactor activities.

3.10.17 ED3B

ED3B is located downstream of Evaporation Dam 3. The average standing water level in ED3B is 784.44 m RL and has been fairly stable since 2004 (refer to Figure 16.1).

Water quality results (refer to Table T10.17 and Figure 33) in ED3B indicate a water type which is near neutral (average pH 7.1) and conductivity (average 7810µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L and consistent with historical trends. There is a slight increase in Lead concentration (0.0043mg/L) in this monitoring period, but it is still lower than the long term Lead average (0.0051mg/L) recorded since 2004.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (12mg/L) indicates organic matter is present in the groundwater at this location, which may include microbial communities.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.18 WM1

WM1 is located within the northeast of the landfill void. The average standing water level in WM1 is 717.85 m RL compare to the long term average at 733.28 m RL since

2004 (refer to Figure 16.2). The standing water level has return back to 736.71 m RL at the end of the reporting period which is consistent to the long term average.

Water quality results (refer to Table T10.18 and Figure 34) in WM1 indicate a water type which is slightly alkaline (average pH 7.33) and stable conductivity (2100µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L with the exception of Zinc (2.69mg/L) which is consistent with historical trends.

Ammonia (average 0.13mg/L) and Total Organic Carbon (7mg/L) are present at low levels which reflect natural conditions.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.19 WM3

WM3 is located within the south of the landfill void and has been decommissioned in the second half this monitoring period due to waste covering on the well level. The average standing water level in WM3 during monitoring period is 701.88 m RL which has shown a noticeable increase from the long term average 686.78 m RL recorded since 2004 (refer to Figure 16.2).

Water quality results (refer to Table T10.19 and Figure 35) in WM3 indicate a water type which is acidic (average pH 4.15) and conductivity (average 3350µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. Heavy metals are less than 1mg/L except for Aluminium (48mg/L), Manganese (12mg/L) and Zinc (200mg/L) which is consistent with previously reported results.

Ammonia (average 1.27mg/L) and Total Organic Carbon (3mg/L) are present at low levels which reflect natural conditions.

WM3 is located in an area of known AMD impacted groundwater. No significant variations or anomalies were recorded for any analyte tested during this monitoring period, although heavy metal concentrations continue to fluctuate as expected in AMD impacted waters.

3.10.20 WM4

The standing water level in WM4 is measured as 633.57 m RL and has been relatively stable since 2004 (refer to Figure 16.2).

Only one quarterly round of testing was obtained during this reporting period as there was insufficient water within the monitoring well to complete quarterly sampling rounds.

Water quality results (refer to Table T10.20 and Figure 36) in WM4 indicate a water type which slightly alkaline (average pH 7.4) and conductivity (average 1886µS/cm) representative of brackish water. These results are consistent with previously reported trends.

Ammonia was not detected during this reporting period. All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period from the data available.

3.10.21 WM5

WM5 is located to the west of the void near Evaporation Dam 3 South. The average standing water level in WM5 is 783.88 m RL during this reporting period and has been consistently around 784RL since 2004 (refer to Figure 16.2).

Water quality results (refer to Table T10.21 and Figure 37) in WM5 indicate a water type which is slightly alkaline (average pH 7.5) and conductivity (average 7180µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not tested during this reporting period due to the dry well at the annual monitoring round. All heavy metals tested were less than 1mg/L.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Sulphate recorded on this monitoring period (average 220 mg/L) is slightly higher than the long term average (200mg/L) since 2004.

All other trends are relatively consistent and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.22 WM6

WM6 is located to the west of the void adjacent to Evaporation Dam 3 North. The standing water level in WM6 is measured as 786.38 m RL during this monitoring

period has been consistent to the long term average (786.17 m RL) recorded since 2004 (refer to Figure 16.2).

Water quality results (refer to Table T10.22 and Figure 38) in WM6 indicate a water type which is slightly acidic (average pH 6.67) and stable conductivity (average 13460µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX and TPH were not detected at this monitoring point. PAH (0.0005mg/L) was detected at the detection limit. All heavy metals are less than 1mg/L which is consistent with historical trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (5mg/L) is present at low levels which reflect natural conditions.

All trends are relatively consistent and there is no indication of contamination from mining or Bioreactor activities.

3.10.23 WM7

No sampling of WM7 could be undertaken during the reporting period as this well was decommissioned during the 2010-2011 monitoring period due to waste covering the well level. VES have previously submitted a replacement program to the EPA for approval (condition U2) to replace this location. No response has been received by the end of this reporting period. VES shall be reevaluating the replacement of this well and enter further discussions with the EPA.

Refer to the Earth2Water 2010 AEMR for discussion on trends and groundwater quality for WM7 (Earth2Water, 2010).

3.10.24 MW8S

MW8S is located northern side of Evaporation Dam 3 north. The average standing level of MW8S in this monitoring period is 786m RL compare to the long term average 784m RL (refer to Figure 16.3).

Groundwater generally returns to the well following significant wet weather events which indicates this well intercepts the shallow unconfined aquifer. This monitoring location was dry over the third quarter and one annual round was missing due to the dry well.

Water quality results (refer to Table T10.23 and Figure 39) in MW8S indicate a water type which is near neutral (average pH 6.9) and conductivity (average 12930µS/cm)

representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not measured at this monitoring point due to the dry well at the annual monitoring round. The measured heavy metals are less than 1mg/L with the exception of Zinc (5.4mg/L) which is lower than the Zinc concentration measured in the previous reporting period (18mg/L) and is consistent with historical trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon was not measured due to that the well was dry during the annual monitoring round.

Trends from this well are difficult to establish due to the limited sampling possible at this well, although no significant variations or anomalies we can be seen in the trend graph. There is no indication of contamination from mining or Bioreactor activities.

3.10.25 MW8D

MW8D is located within is adjacent to MW8S. The average standing water level in MW8D is 785 m RL in this monitoring period is consistent to the long term average of 784.11 m RL since the well was commissioned in 2007 (refer to Figure 16.3). Water level trends reflect those in MW8S and only returns after heavy wet weather events which indicate this well is also connected to the shallow unconfined aquifer.

Water quality results (refer to Table T10.24 and Figure 40) in MW8D indicate a water type which is near neutral (average pH 6.5) and conductivity (average 10873µS/cm) representative of brackish water. These results are consistent with previously reported trends.

BTEX, PAH and TPH were not detected at this monitoring point. All heavy metals are less than 1mg/L with the exception of Manganese (2.7mg/L) and Zinc (average 20mg/L), which are similar concentrations to MW8S and is consistent with historical trends.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (5mg/L) is present at low levels which reflect natural conditions.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.26 MW9S

MW9S is located on the northwest side of Evaporation Dam 3 North. The average standing water level in MW9S is 786.63 m RL which has minor variations since the well was commissioned in 2007 and appears to show a slight increasing trend since September 2009 (refer to Figure 16.3).

Water quality results (refer to Table T10.25 and Figure 41) in MW8D indicate a water type which is near neutral (average pH 7) and conductivity (average 10717µS/cm) representative of brackish water.

TPH, PAH and BTEX were not detected at this monitoring point. All heavy metals were significantly less than 1mg/L.

Ammonia (average 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (7mg/L) is present at low levels which reflect natural conditions.

All trends indicate fairly stable concentrations and there is no indication of contamination from mining or Bioreactor activities. No significant variations or anomalies were recorded for any analyte tested during this monitoring period.

3.10.27 MW10S

MW10S is located on the northeast side of Evaporation Dam 3 North. No sampling of MW10S could be undertaken during the reporting period as this well was continually dry (refer to Figure 16.3 for base of monitoring well level). This has been a consistent observation since the well was commissioned in 2007.

No data is available to produce tables or graphs for this monitoring point.

3.11 Piezometer Water Level Monitoring

Standing water level measurements are undertaken at six monitoring locations around the void in accordance with EPL 11436. Each monitoring location consists of a shallow (reference A) and deep (reference B) piezometer. The piezometers enable measurements of groundwater levels to be made in the immediate vicinity of the Bioreactor.

3.11.1 P38A & P38B

Access to the monitoring location P38 has been restricted by Site Management due to safety concerns regarding the stability of this area of the void. The EPA has been notified of the geotechnical safety concerns surrounding of this areatherefore, monitoring of the site has been ceased since 2010.

Refer to the Earth2Water 2010 AEMR for discussion on trends and groundwater levels for P38A and P38B (Earth2Water, 2010).

3.11.2 P44A & P44B

P44 is located within the east of the void. Standing water levels are presented in Table T11.1 and Figure 42.

Standing water level in P44A (shallow) indicated a variable standing water level from 715.8m RL to 716.56m RL during the reporting period. Standing water levels are consistent with historical monitoring results and indicate that the shallow aquifer is influenced by rainfall and infiltration.

Standing water level in P44B (deep) has maintained a gradual increase during this reporting period to 712.7m RL. This continues the increasing trend observed since 2005.

3.11.3 P45A & P45B

P45 is located within the east of the mine void, and to the south of P44. Standing water levels are presented in Table T11.2 and Figure 42.

Standing water level in P45A (shallow) showed a range of 715.66m RL to 717.06m RL. These levels are consistent with historical monitoring results and still reflect a gradual rise in groundwater levels at this location since 2002.

Standing water level in P45B (deep) has continued to increase over the reporting period reflecting a gradual rise in groundwater levels at this location since 2002. Water levels in P45B showed a similar trend to P45A during this reporting period and is generally higher than P45A (up to 3m difference).

3.11.4 P58A & P58B

P58 is located within the west of the void. Standing water levels are presented in Table T11.3 and Figure 42.

Standing water level in P58A (shallow) was below the base (764.21RL) of the piezometer during the reporting period.

The peak groundwater level in the previous reporting period was 756.46 RL, and the average groundwater level has returned to 750.62m RL on this monitoring period. Groundwater levels have slightly subsided since this time; although groundwater levels are still elevated compared with historical values. Further monitoring will determine if sudden rise in groundwater level is maintained.

3.11.5 P59A & P59B

P59 is located within the west of the void and to the south of P58. Standing water levels are presented in Table T11.4 and Figure 42.

Standing water level in P59A (shallow) has a range of 786.85m RL to 787.1m RL on this monitoring period. Standing water level in P59A (shallow) had a similar trend to P59B and P45A. Groundwater levels were relatively stable with results during the previous reporting period.

Standing water level in P59B (deep) indicates the shallow (P59A) and deep piezometers have shown similar groundwater level trends since November 2005. (Figure 42)

3.11.6 P100A & P100B

P100 is located within the northeast of the void. Standing water levels are presented in Table T11.5 and Figure 42.

The standing water level in P100A (shallow) has showed minor fluctuations throughout the reporting period from 745.58m RL to 746.63m RL. The overall trend of standing water level at P100A still reflects a gradual increasing trend.

P100B (deep) was recorded as dry during the reporting period. The base level of the piezometer is approximately 698.29RL. This has been a consistent trend with spikes occurring periodically.

3.12 Volume Monitoring

VES manages the water volume in Evaporation Dam 3 is well below the 323 Megalitre limit specified in EPL 11436. Water level readings were taken monthly (refer to Table T12 and Figure 43) as required by EPL 11436. The volume of water (average 210.16 ML) which combines extracted leachate and stormwater from the Bioreactor did not exceed 323 megalitres during the reporting period.

PART 2 EPL 11455 CRISPS CREEK INTERMODAL FACILITY

4. IMF OPERATIONS

VES operates the Crisps Creek Intermodal Facility (IMF) where all waste from the Sydney region is received prior to final disposal at the Bioreactor. The IMF is comprised of a hardstand located adjacent to the regional rail network (approximately 1 kilometre south of Tarago train station) to enable transfer of waste (transported from Sydney) from rail to road (Appendix 1).

The IMF is operated under EPL 11455 which details the operating conditions and environmental monitoring requirements.

4.1. Licence Conditions

This section discusses compliance with EPL 11455 conditions.

4.1.1. Pollution of Waters

All discharged water is diverted through the first flush system. Monitoring is undertaken after rainfall events and water quality assessed prior to discharge into the Mulwaree River (condition L1) .

4.1.2. Waste

All waste received at the IMF was General Solid Waste (Putrescible Waste and Non-Putrescible Waste) which was transported from the CTT. All waste was maintained in sealed containers and transported to the Bioreactor on the same day (Condition L5) .

4.1.3. Noise Limits

Noise limits for the IMF (Condition L6.1) must not exceed 35 dB(A) $L_{Aeq\ (15\ minute)}$ at the nearest residential receiver. No noise complaints have been received since operations commenced in 2004. Therefore, no noise monitoring was undertaken during this reporting period. VES will implement a noise monitoring program in the event that a noise complaint is received (Condition L6) .

4.1.4. Hours of Operation

Condition L7 required operational activities to be undertaken on Monday – Saturdays between 6:00am to 10:00pm. VES has complied with the requirements of this condition.

4.1.5. Offensive Odour

No odour complaints were received for the IMF during this reporting period. (Condition L8)

4.1.6. Competency of Operations

Refer to section 2.1.6.

4.1.7. Maintenance of Plant and Equipment

All plant and equipment were maintained in proper order and serviced as required by qualified technicians. All VES operators hold the appropriate qualifications and licenses to operate plant and equipment used as part of IMF operations. (Condition O2)

4.1.8. Dust Control

The IMF is a hardstand site with fully paved roads to access the site. All waste movements are completed within fully enclosed containers until reaching the Bioreactor. (Condition O3)

4.1.9. Stormwater and Wastewater Management

All conditions specified in condition O4 were developed and included within the design and construction of the IMF.

All container and vehicle washing is completed in the dedicated areas at the Bioreactor (condition O4.4). No container or vehicle washing was completed at the IMF during this reporting period.

No sewage was removed from the IMF (condition O4.5) and uncontaminated water was not utilised in vegetated areas (condition O4.6) during this reporting period

4.1.10. Tracking of Mud and Waste

As all waste movements occur within enclosed containers on a hardstand site, tracking of mud and waste from the IMF did not occur during the reporting period. No opening of containers was required to be undertaken at the IMF during this reporting period. (Condition O5)

4.1.11. Waste Transportation

All containers utilised in the transportation of waste maintain carbon filters to minimise potential odour emissions. All containers have rubber seals to contain leachate during transportation.

VES last upgraded the containers in 2011 and undertakes maintenance as required to ensure efficient operation. (Condition O6)

4.1.12. Fire Extinguishment

There were no fires at the IMF during this reporting period. (Condition O7)

4.1.13. Fire Fighting Capability

All VES operators are trained in emergency situations, which include fire fighting. Fire extinguishers and a 20,000L water tank are maintained onsite to enable effective fire fighting capabilities for the different types of fires that could occur onsite.

Crisps Creek and Mulwaree River are located adjacent to the IMF which is an approved and readily available water source for fire fighting. The Tarago Fire Brigade is also located approximately 1 kilometre from the site which enables fast mobilisation at the site (Condition O8) .

5. ENVIRONMENTAL MONITORING

5.1. Monitoring Points

VES is required to monitor environmental performance of the IMF under EPL 11455. Table 5.1 details the VES monitoring point identification, EPL monitoring point identification number, frequency and the type of monitoring undertaken at each licensed point. A monitoring location plan is included in Appendix 6.

Table 5.1: Licensed Monitoring Points

EPA ID	VES ID	Frequency	Type of Monitoring
1	Site 110	6 x Annually	Surface Water
2	Site 150		
3	IMF First Flush		
4	DG18 IMF	Monthly	Dust / Particulates

VES also undertakes additional surface water quality monitoring at Site 130 (located upstream of Crisps Creek Intermodal in Mulwaree River) to provide additional background quality information.

5.2. Surface Water Monitoring

Surface water quality monitoring at 3 monitoring locations (refer to Table 4.4) was undertaken as required by EPL 11455.

5.2.1. Site 110

Site 110 is located upstream of the IMF and approximately 8 kilometres downstream of the Bioreactor.

Results at Site 110 (refer to Table T13.1 and Figure 44) indicate slightly alkaline water (average pH 7.48) and conductivity (average 1106µS/cm) representative of fresh water.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (average 15.6mg/L) is present at levels which reflect natural organic matter in streams. Oil and Grease was below laboratory detection limits for all sampling events (<1mg/L).

Biological Oxygen Demand (average 2.6mg/L), Total Kjeldahl Nitrogen (average 0.93mg/L), Phosphorous (average 0.074mg/L) and Total Suspended Solids (average 12.4mg/L) concentrations are similar with historical trends.

Heavy metals are generally less than 1mg/L.

Trends indicate high variability for most parameters tested, although this is not uncommon when sampling intermittent streams.

5.2.2. Site 130

Site 130 is located upstream of the IMF in the Mulwaree River.

Results at Site 130 (refer to Table T13.2 and Figure 45) indicate slightly alkaline water (average pH 7.56) and conductivity (average 526µS/cm) representative of fresh water.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (average 13.2mg/L) is present at levels which reflect natural organic matter in streams. Oil and Grease was below laboratory detection limits for all sampling events (<1mg/L). These results are consistent with to Site 110.

Biological Oxygen Demand (average 3mg/L), Total Kjeldahl Nitrogen (average 0.772mg/L), Phosphorous (average 0.048mg/L) and Total Suspended Solids (average 15.2mg/L) concentrations are similar with historical trends. All heavy metals are less than 1mg/L.

5.2.3. Site 150

Site 150 is located 2 kilometres downstream of the IMF on the Mulwaree River, which is also downstream of a railway bridge and Braidwood Road.

Results at Site 150 (refer to Table T13.3 and Figure 46) indicate slightly alkaline water (average pH 7.83) and conductivity (average 915µS/cm) representative of fresh water.

Ammonia (less than 0.1mg/L) was not detected during this reporting period. Total Organic Carbon (average 9.75mg/L) is present at levels which reflect natural organic matter in streams. Oil and Grease was below laboratory detection limits for all sampling events (<1mg/L). These levels are consistent with Site 110 and 130.

Biological Oxygen Demand (3mg/L) was only above detection limits in October 2012. Total Kjeldahl Nitrogen (average 0.57mg/L), Phosphorous (average 0.035mg/L) and Total Suspended Solids (average 14.5mg/L) concentrations are similar with historical trends.

All heavy metals are less than 1mg/L which is consistent with historical trends.

5.2.4. IMF First Flush

The IMF First Flush is located at the surface water outlet point of the site, prior to runoff into Crisps Creek.

Results of the IMF First Flush system (refer to Table T13.4 and Figure 47) indicate slightly alkaline water (average pH 7.34) and conductivity (average 120µS/cm) representative of fresh water. Sampling was undertaken in low to high flow events.

Ammonia (0.1mg/L) was only detected above detection limits in March 2012. Ammonia and Total Organic Carbon (average 7.6mg/L) are present at levels which are similar to levels recorded at Site 110 (upstream of IMF) and Site 150 (downstream of IMF). Oil and Grease was below laboratory detection limits for all sampling events (<1mg/L).

Biological Oxygen Demand (BOD) was variable over the monitoring period, ranging from 3mg/L to 9mg/L. The BOD level has reduced on this monitoring period (average 5.6mg/L) compare to the last monitoring period (average 21mg/L) due to the higher flow condition. Total Suspended Solids concentration was also variable, ranging from 20mg/L to 40mg/L which is consistent with historical trends.

Total Kjeldahl Nitrogen (average 0.8mg/L) and Phosphorous (average 0.07mg/L) are reasonably consistent with upstream and downstream concentrations.

All heavy metals are less than 1mg/L.

5.3. Dust / Particulates Monitoring

VES undertakes onsite dust monitoring at one location within the IMF site boundary. Monitoring was undertaken continuously and samples collected monthly to meet the requirements of EPL 11455.

5.3.1. DG18 IMF

Results at DG18 (refer to Table T14 and Figure 48) indicate an average level of total solid matter is 1.33 g/m^2/month. The range of results is consistent with general total solid matter trends since 2009 (2.44 g/m^2/month). Due to enclosed handling of waste on a hardstand site, there does not appear to an operational source for elevated dust levels.

6. BIOREACTOR AND IMF ENVIRONMENTAL PERFORMANCE

VES have implemented the proposed improvements identified in the previous AEMR. Additional improvements are suggested to enhance the environmental performance and reporting at the Bioreactor and IMF:

- Performing site odour audit by independent odour assessor in the next monitoring period. The new odour audit will identify the odour emitting source which will become main focus for odour management for the next reporting period.
- The Leachate Treatment System was upgraded and commissioned on April 2013. The system consists of an Aeration Dam, Polymer Dosing System and a Settlement Tank. This system allows for continuous leachate treatment, rather than the previous batched system. Both quantity and quality are improved by current system and will be further enhanced in the future.
- Consistent Leachate Treatment and Operational Monitoring program is established to keep leachate quality at a level that does no produce offensive odour. The treated leachate is maintained at alkaline condition in Evaporation Dams (ED3N-1, ED3N-2, and ED3N-3) to prevent reproduction of odour in stagnant condition.
- Since Non-compliances were discovered in EPL Annual Return for this monitoring period, corrective measures are identified to minimise the likelihood of missing analytes, periods and locations in the coming reporting period. The corrective actions are described as follows:

- Monitoring Calendar from the previous reporting period has been revised and Monitoring Calendar has been created for the new monitoring period;
- Templates have been created to automate requesting parameters for laboratory analysis;
- An agreement has also been reached with the laboratory to ensure all water samples are retained until Veolia Environmental Services have reviewed each Certificate of Analysis Report.

REFERENCES

1. Earth2Water (2010), *EPL - Annual Assessment of Woodlawn Bioreactor and Intermodal Facility Monitoring Data*, 30 November 2010.
2. VES (2012), *Annual Environmental Monitoring Report – Woodlawn Bioreactor and Crisps Creek Intermodal Facility*, April 2013.
3. EPA (1996), Environmental Guidelines: Solid Waste Landfills, January 1996

FIGURES

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Figure 1 - Nitrogen Oxides

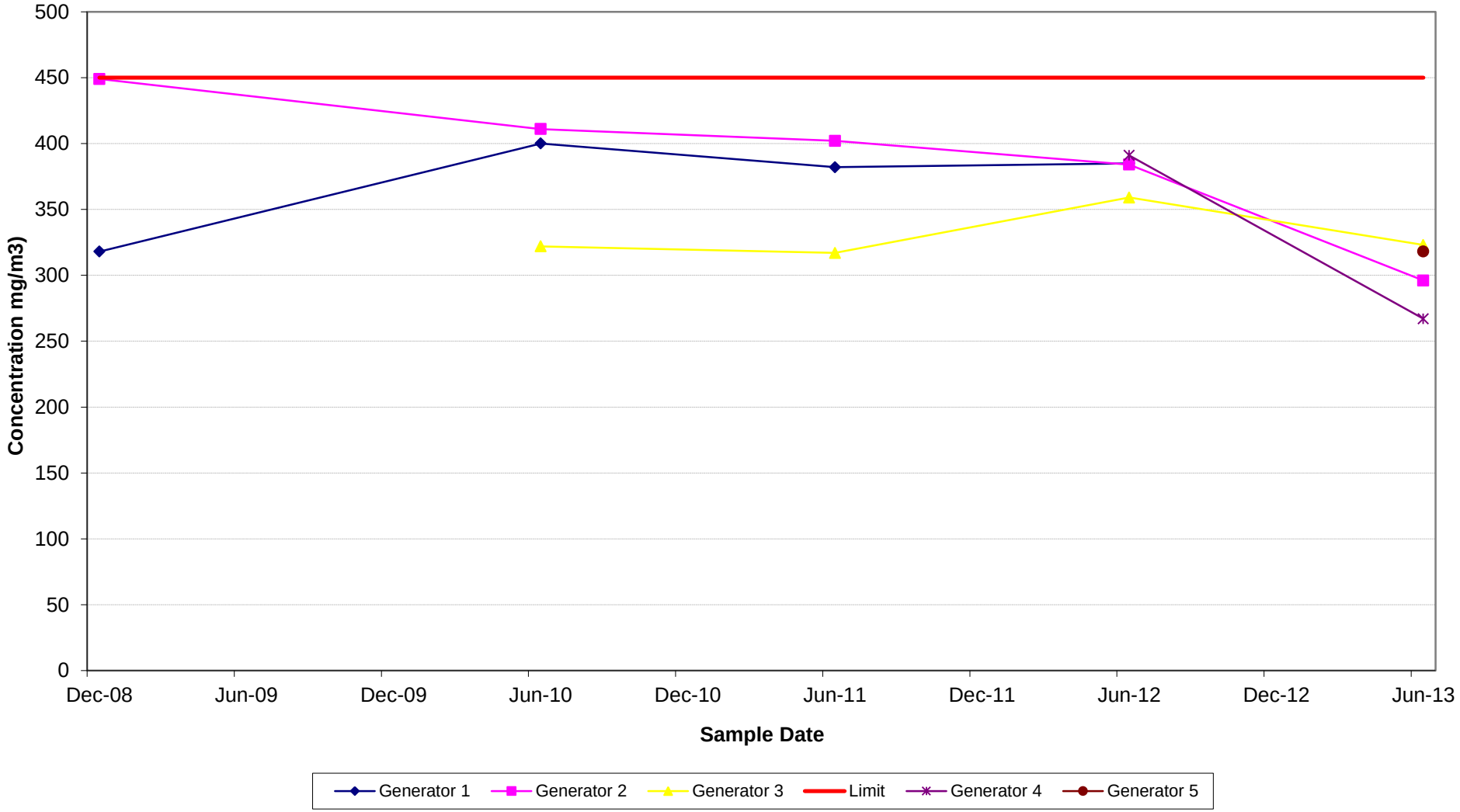


Figure 2 - Hydrogen Sulphide

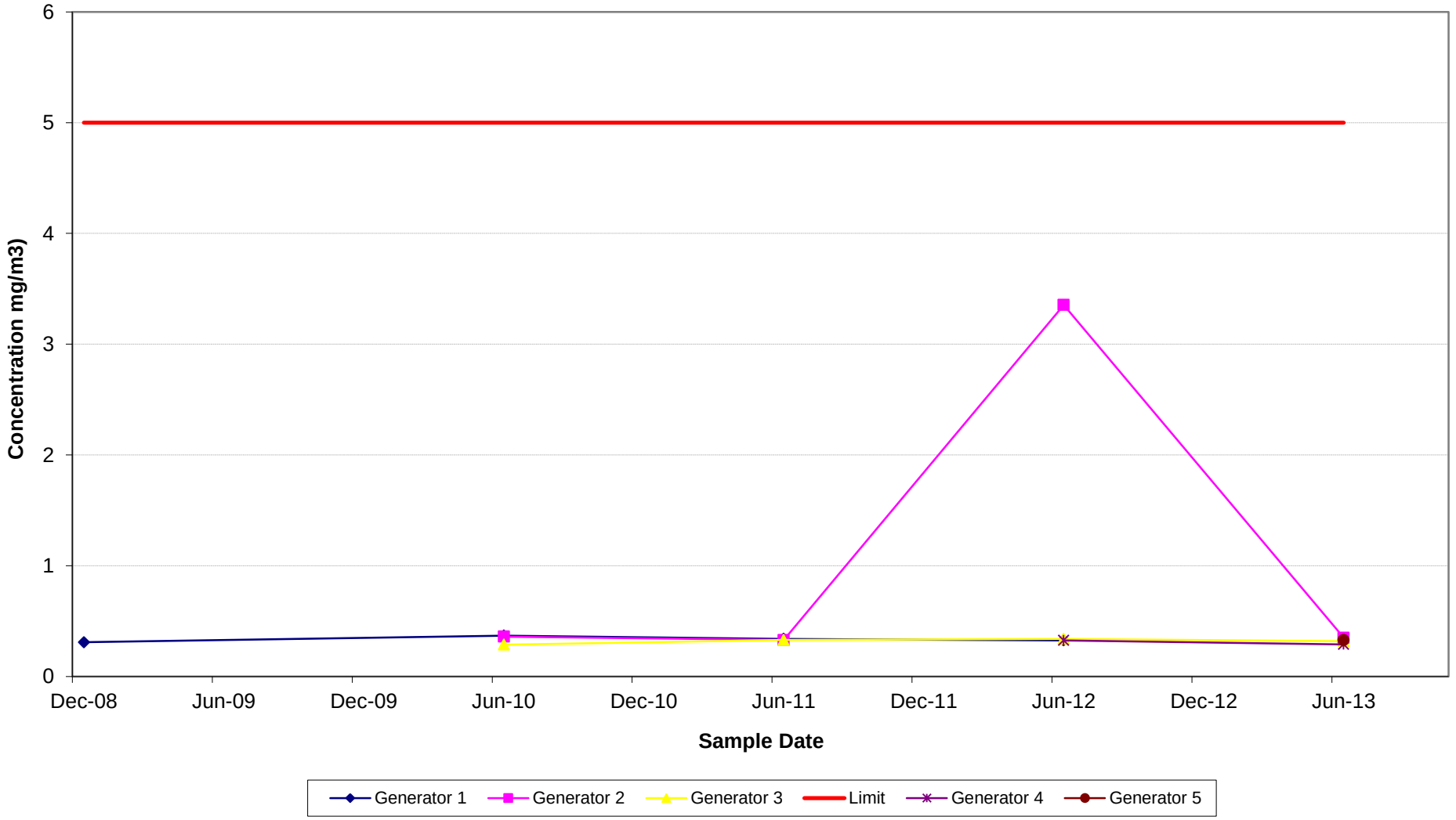


Figure 3 - Sulfuric Acid Mist & Sulfur Trioxide

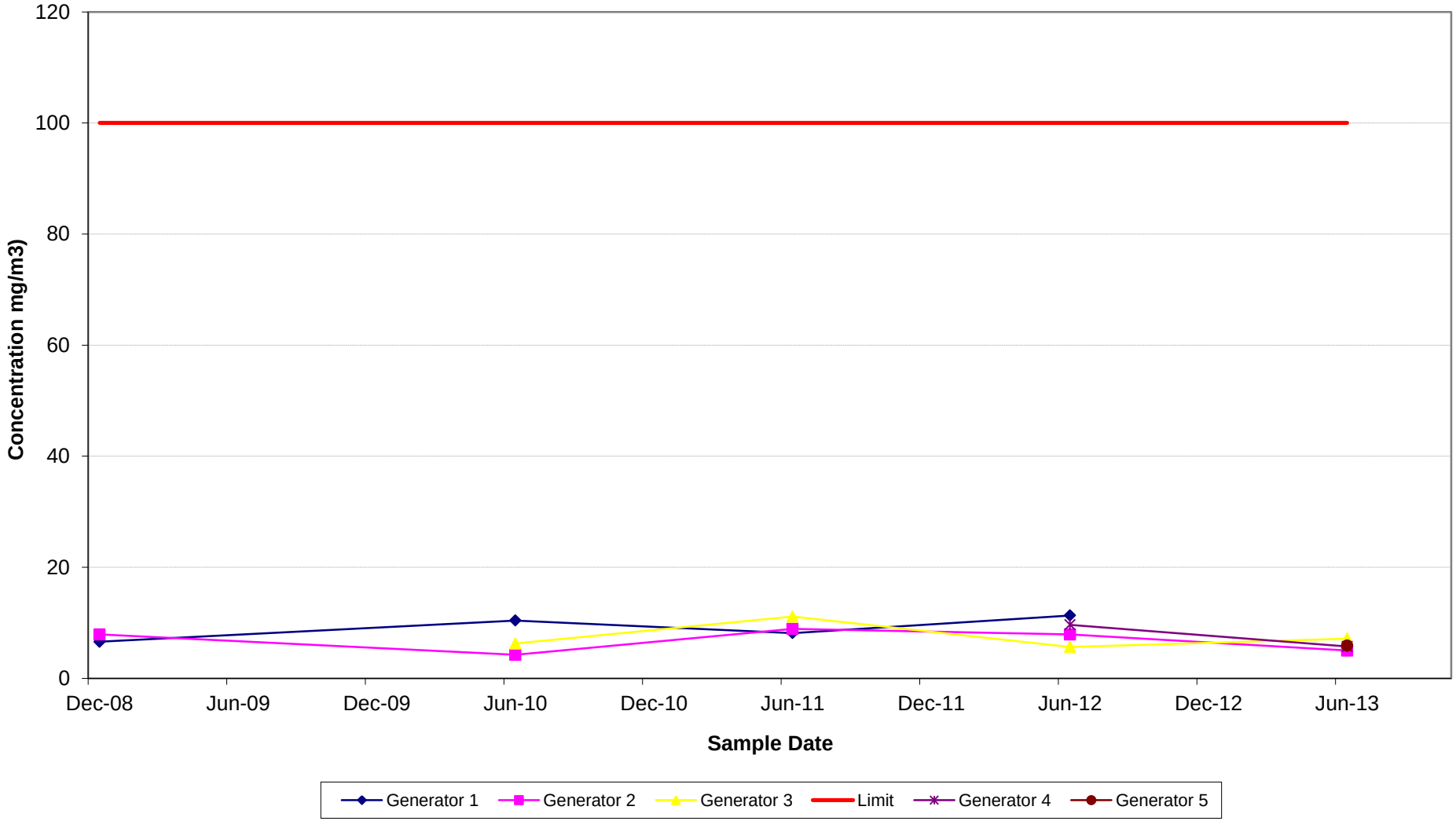


Figure 4 - Depositional Dust Levels

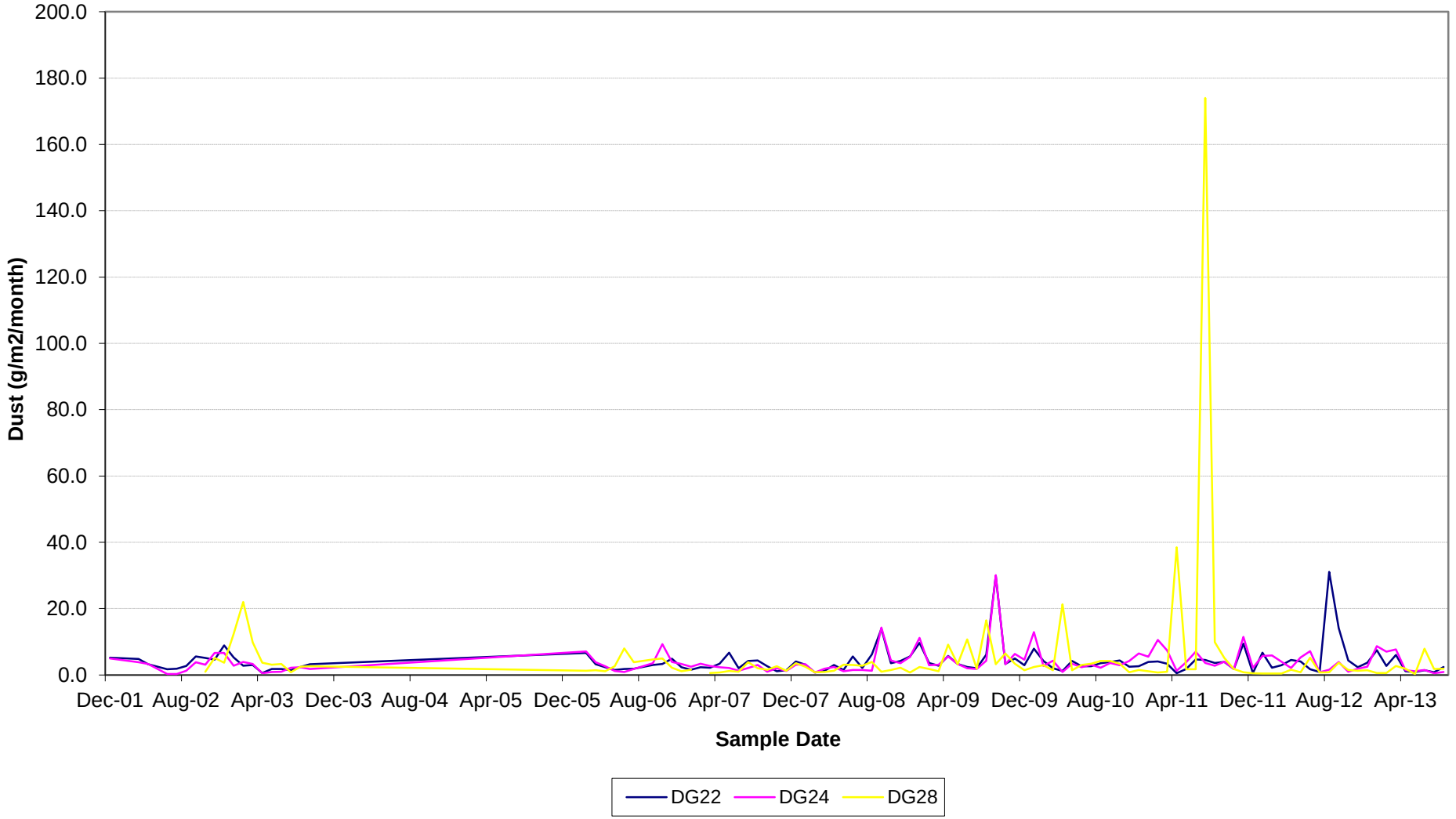


Figure 5 - Surface Water Trends - Site 115

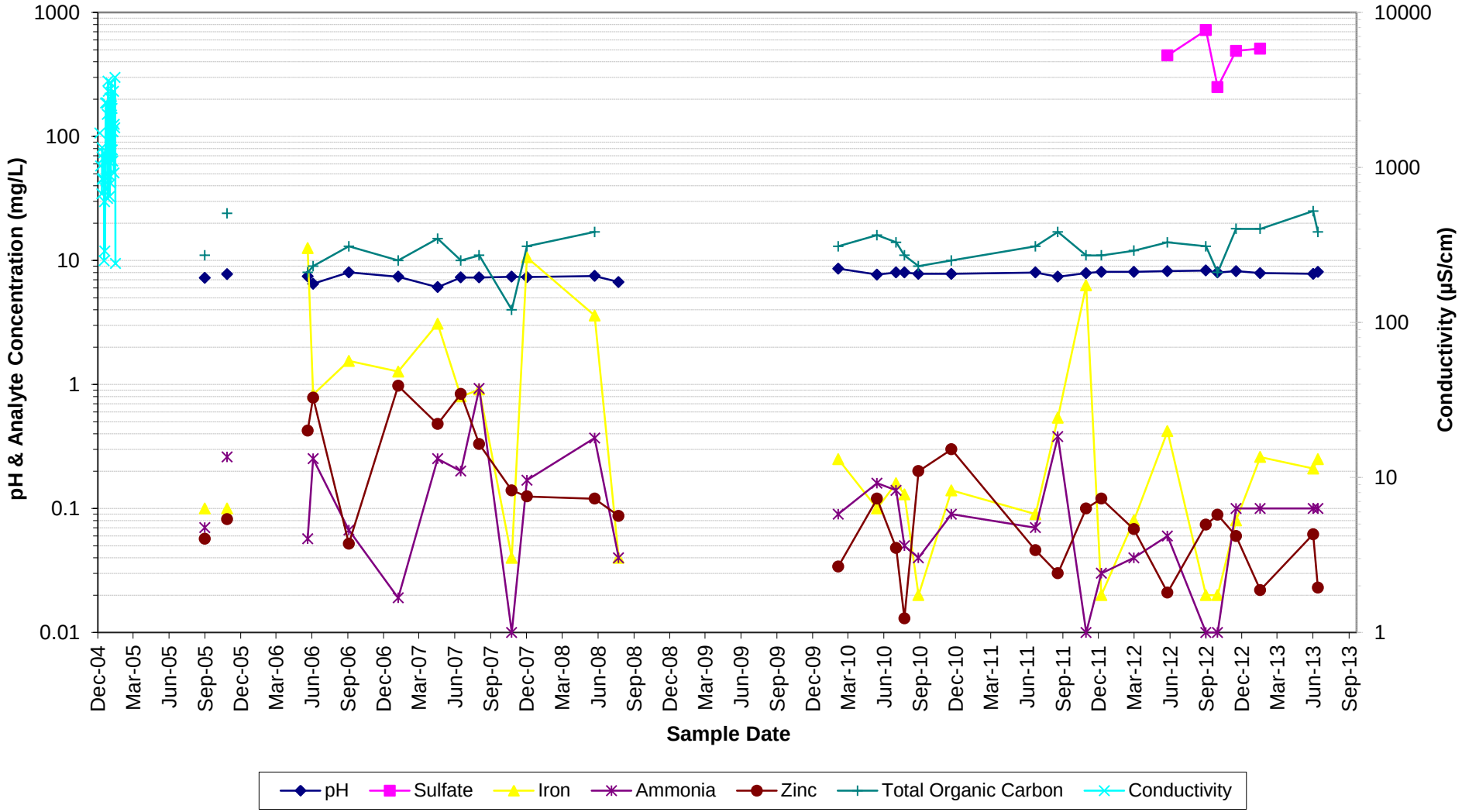


Figure 6 - Surface Water Trends - Spring 2

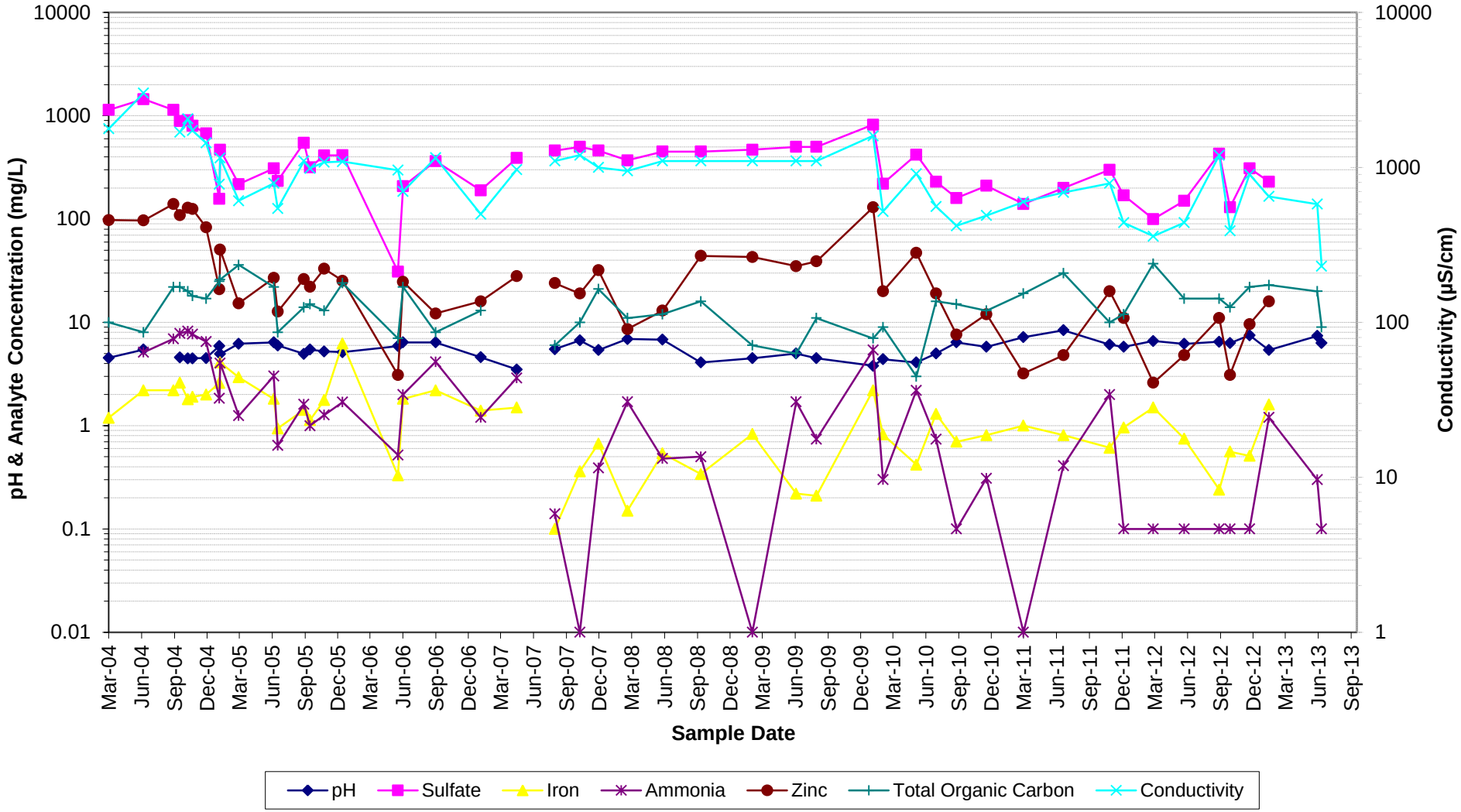


Figure 7 - Surface Water Trends - Site 105

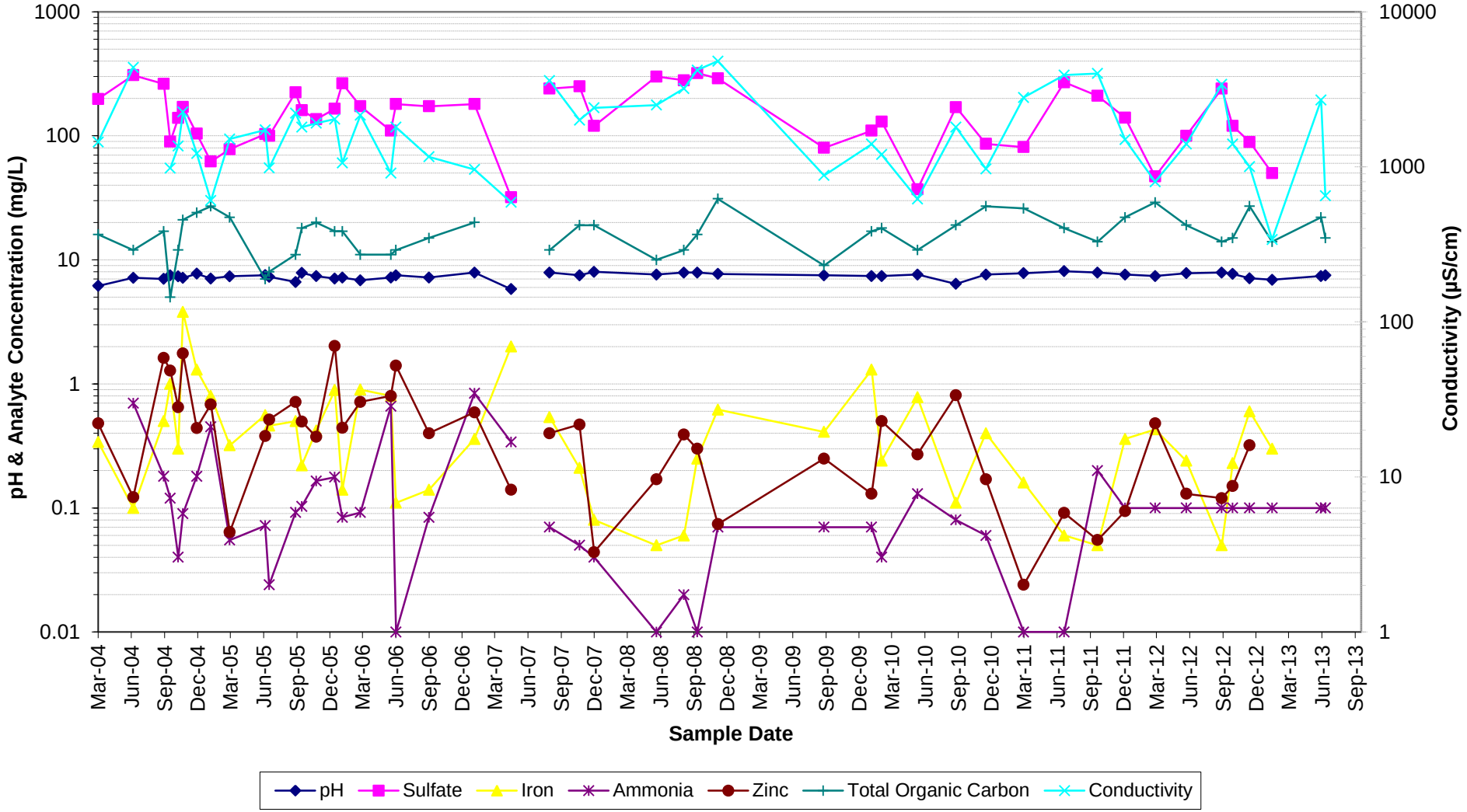


Figure 8 - Surface Water Trends - WM200

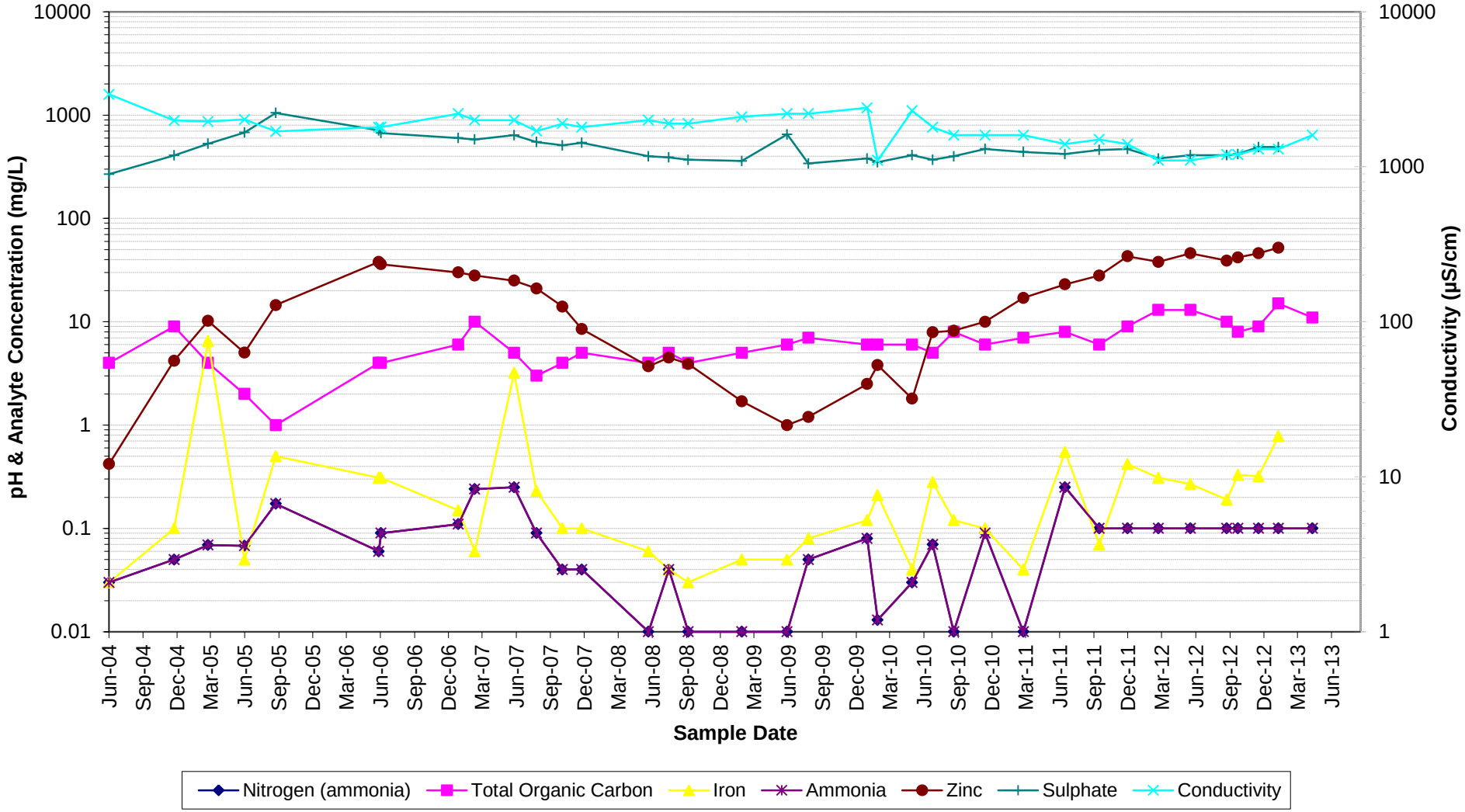


Figure 9 - Surface Water Trends - WM201

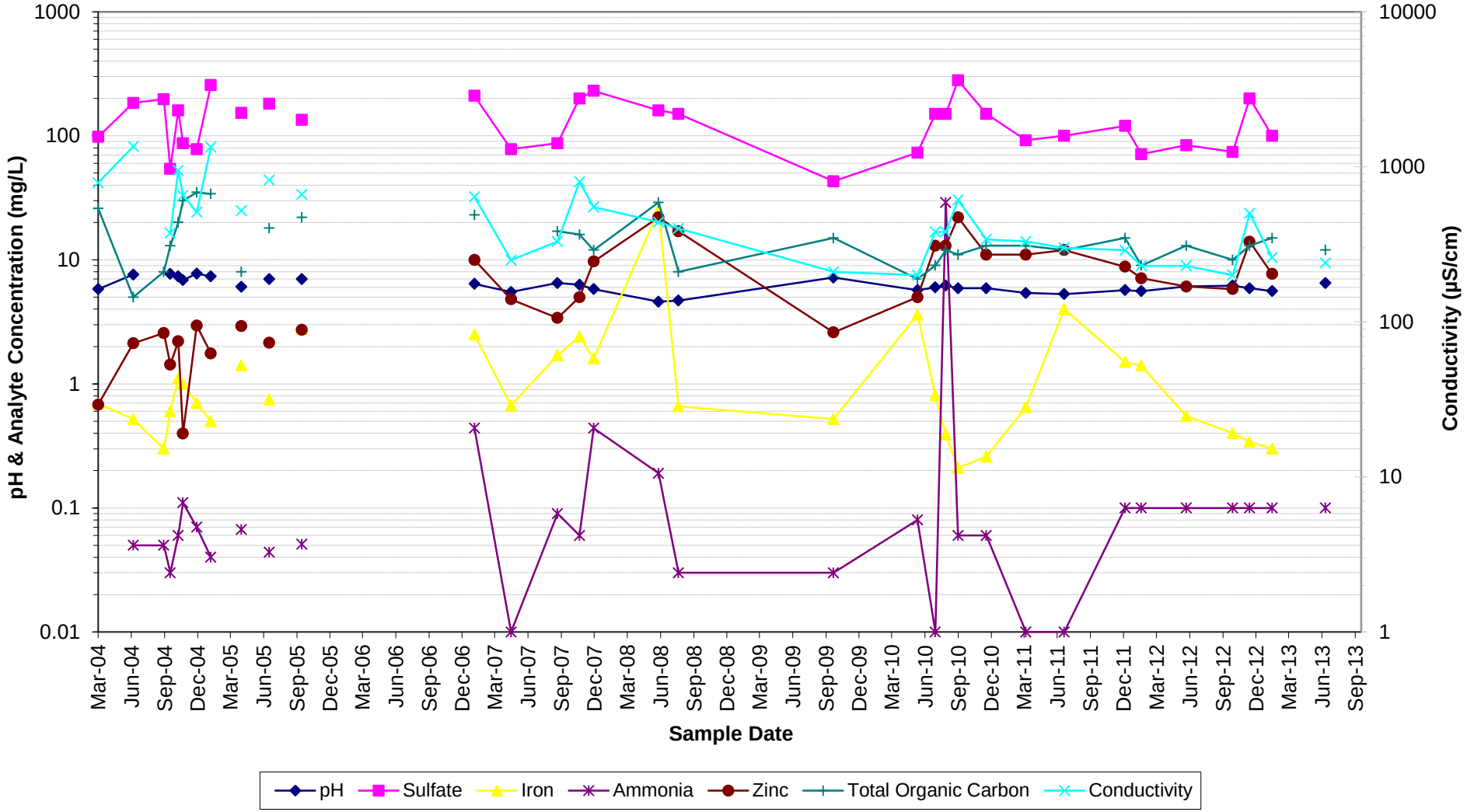


Figure 10 - Surface Water Trends - WM202

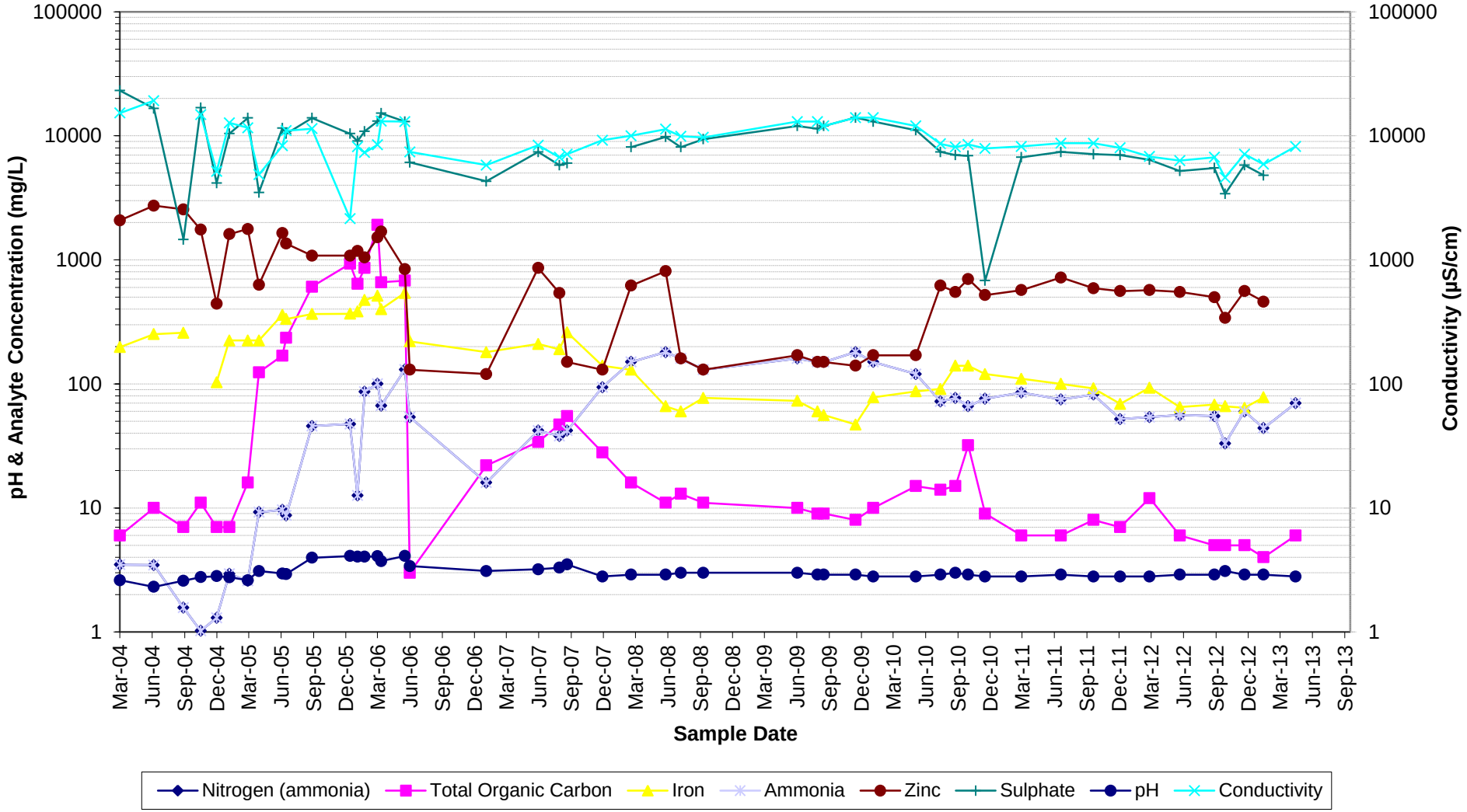


Figure 11 - Surface Water Trends - WM203

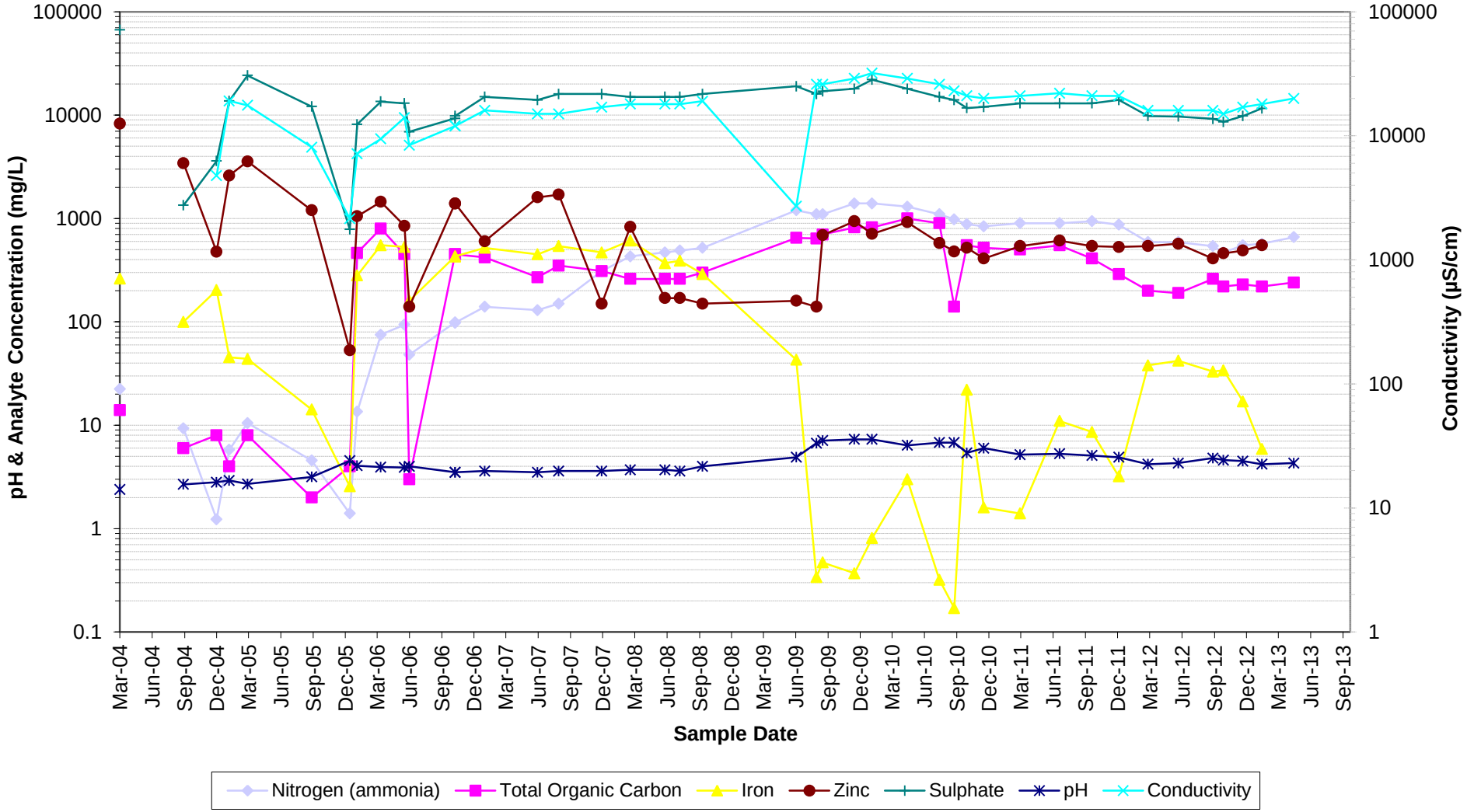


Figure 13 - Surface Water Trends - Pond 3

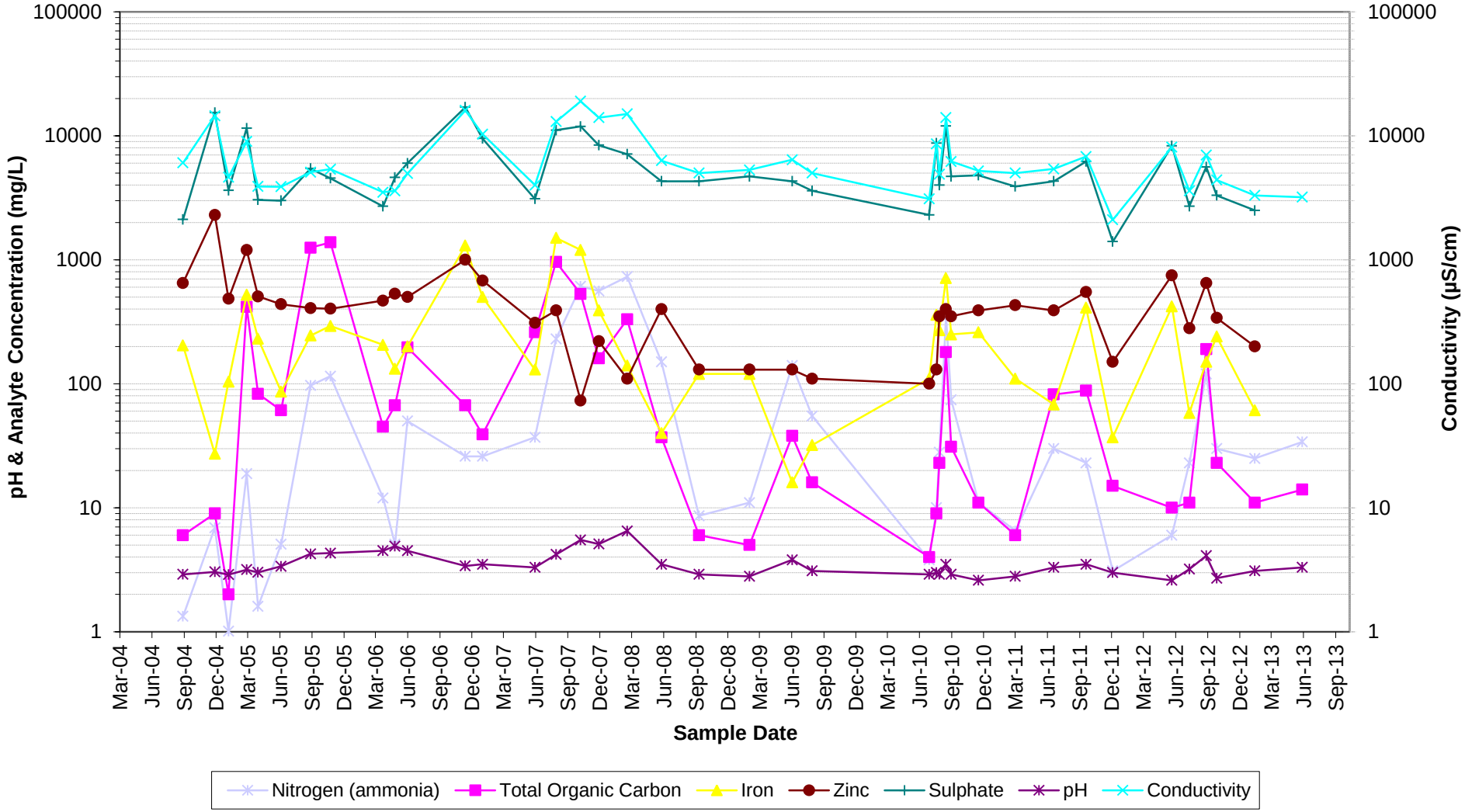


Figure 16.1 - Groundwater Levels - MB1 - MB17 & ED3B

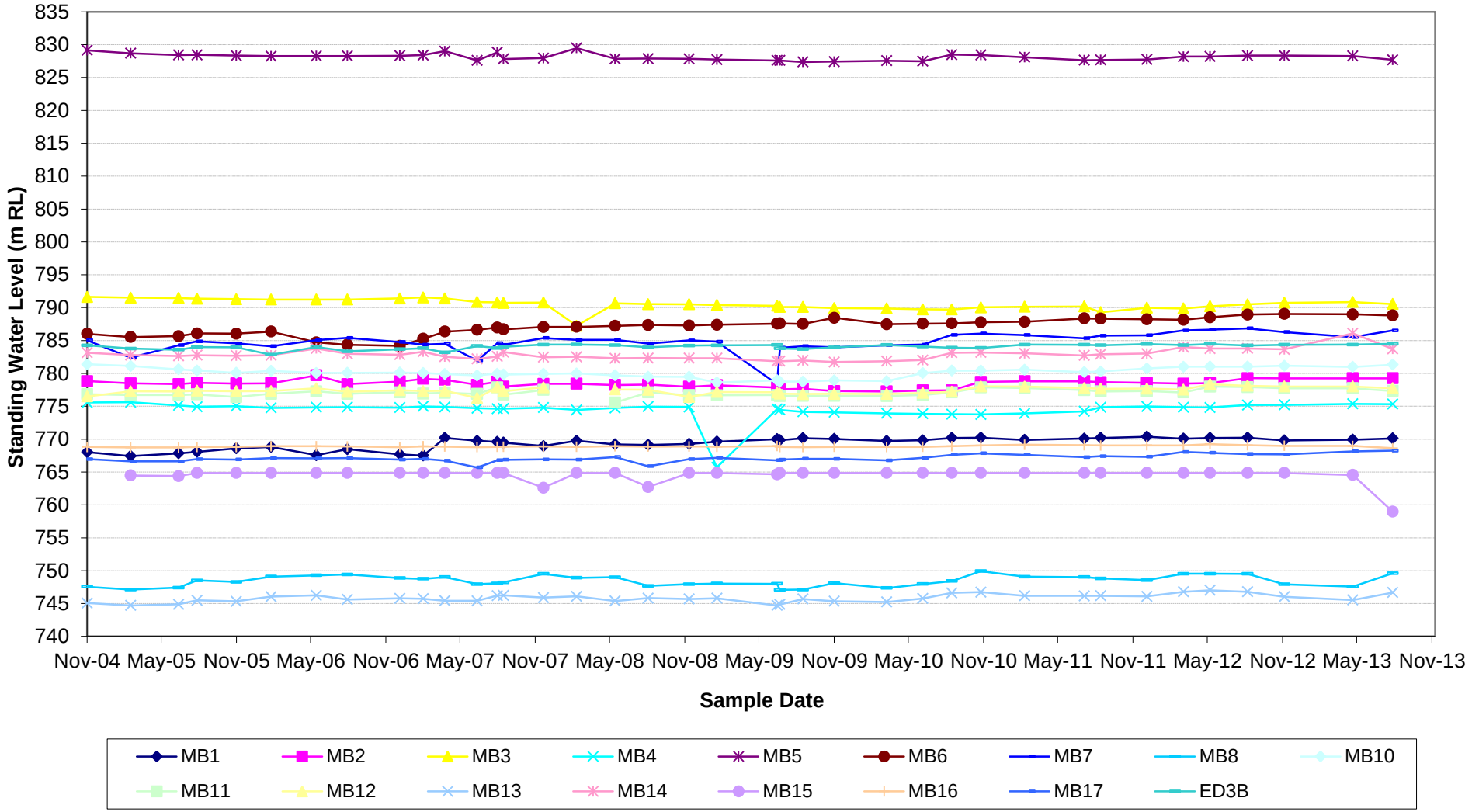


Figure 16.2 - Groundwater Levels - WM1 - WM6

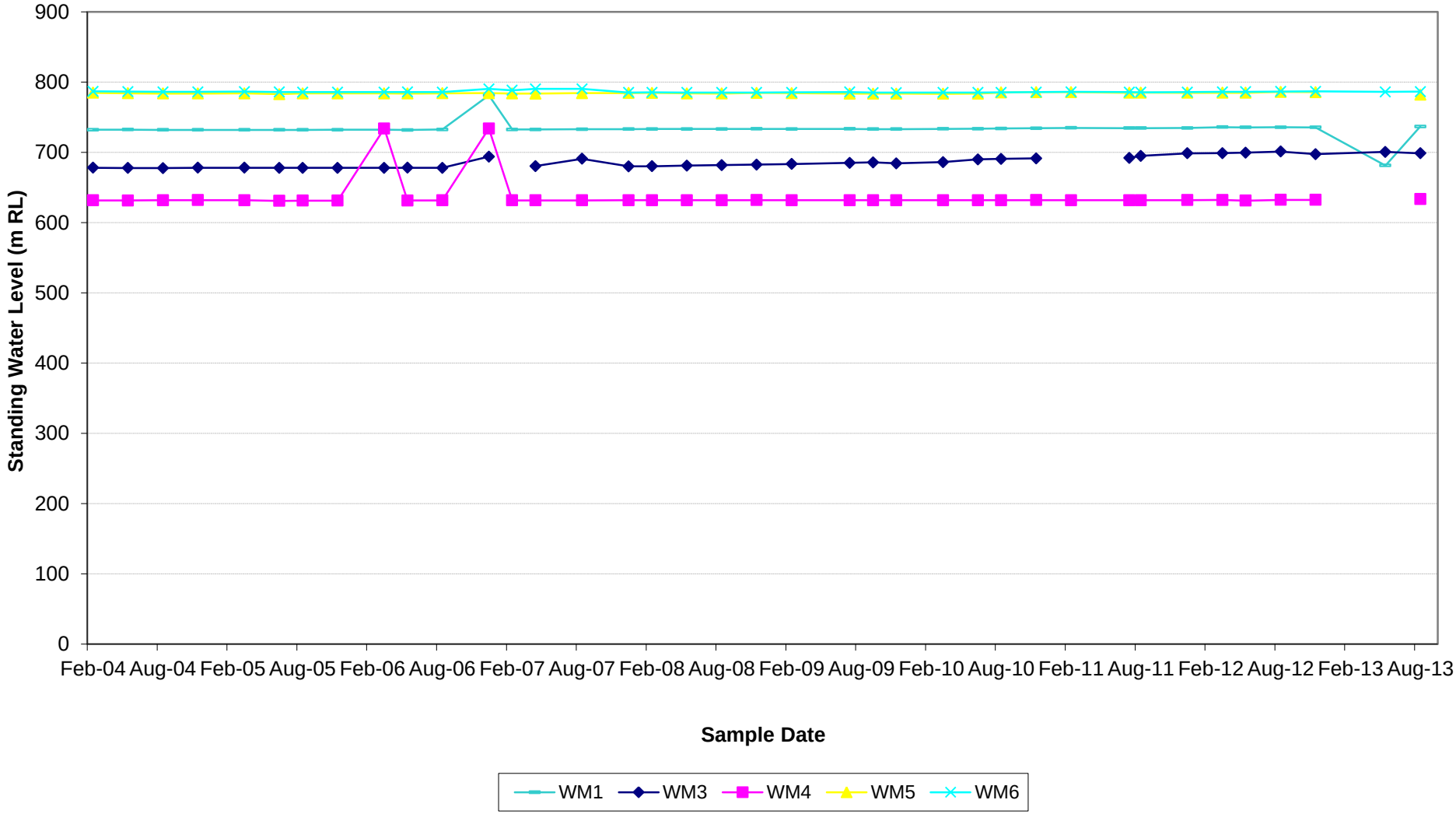


Figure 16.3 - Groundwater Levels - MW8S - MW10S

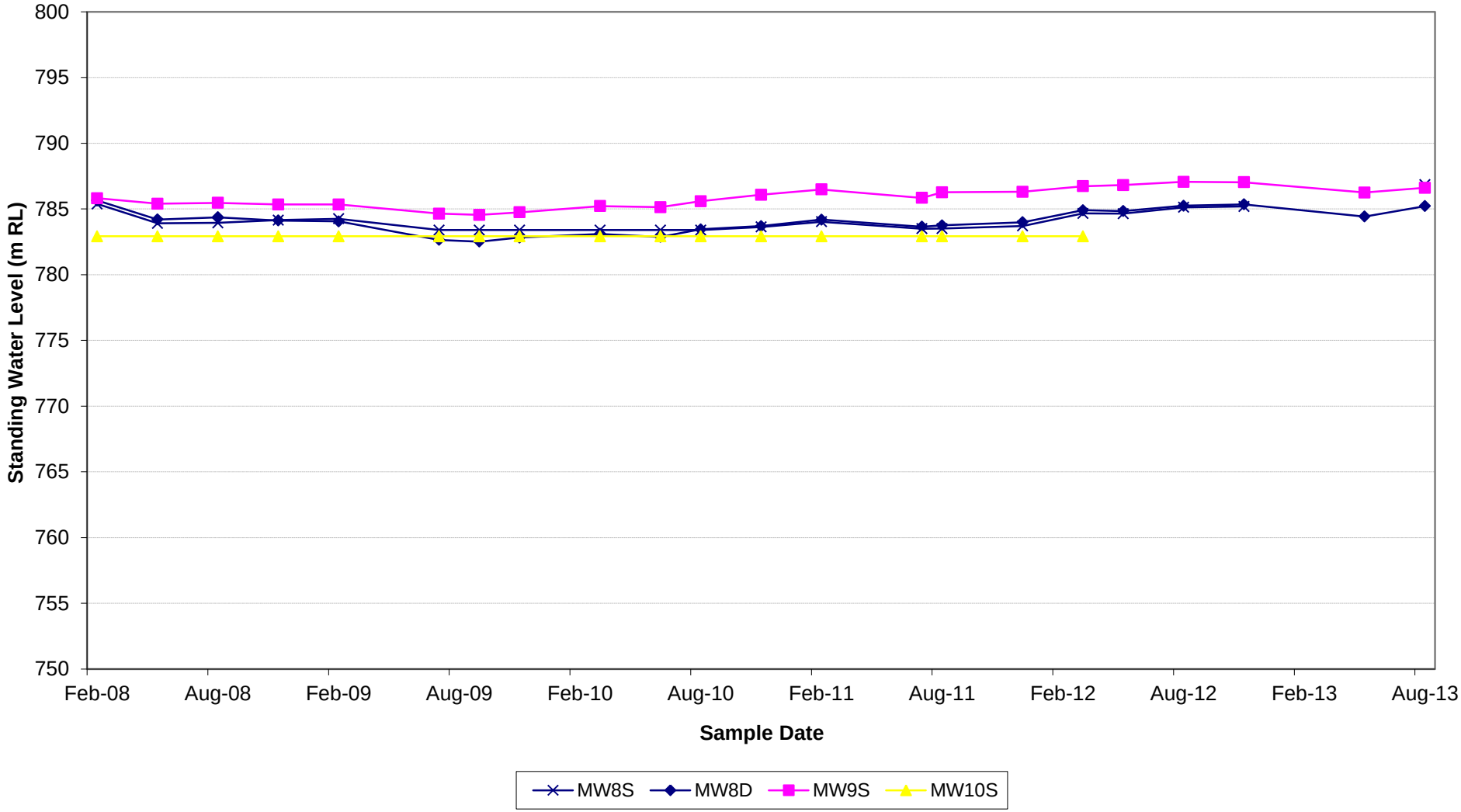


Figure 17 - Groundwater Trends - MB1

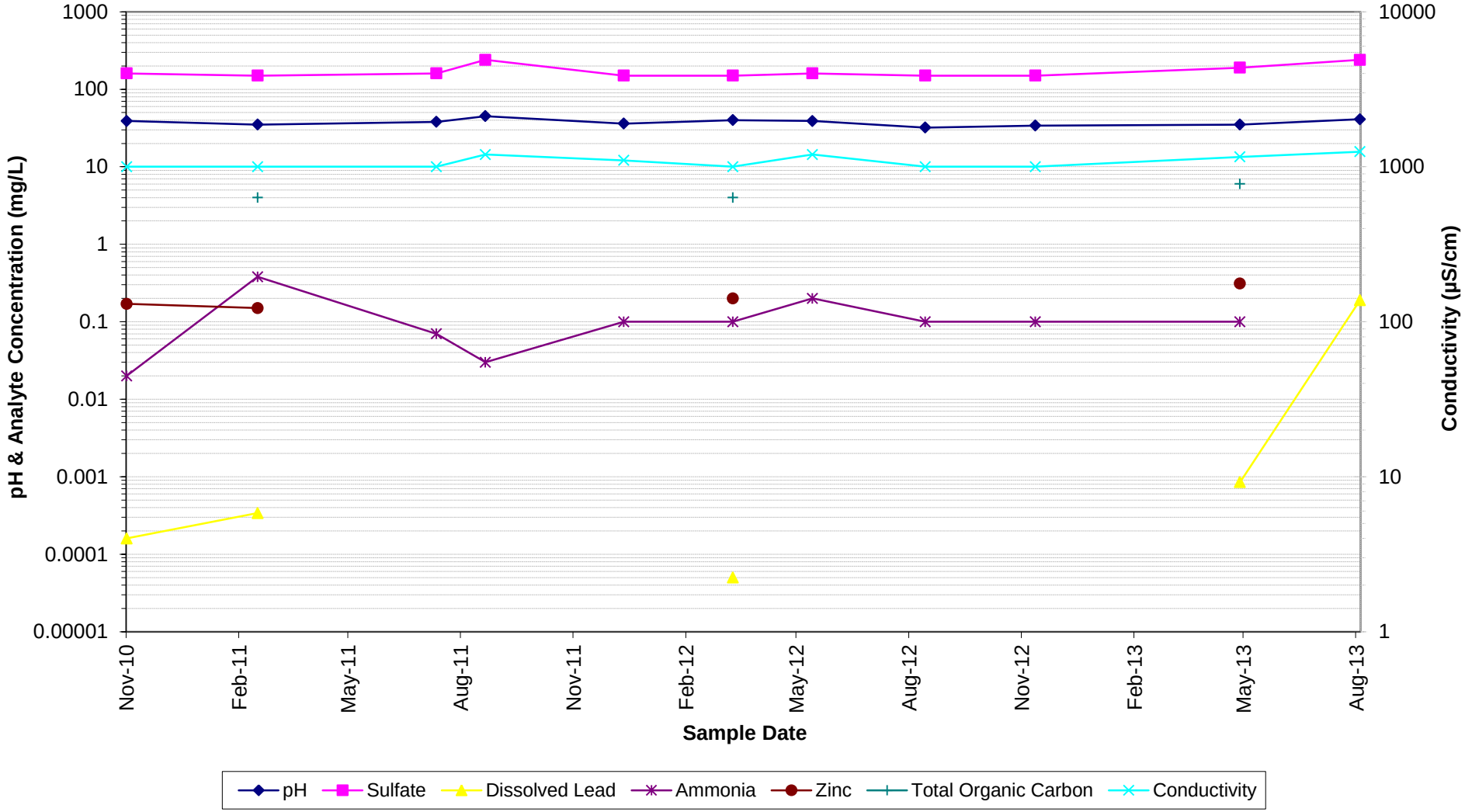


Figure 18 - Groundwater Trends - MB2

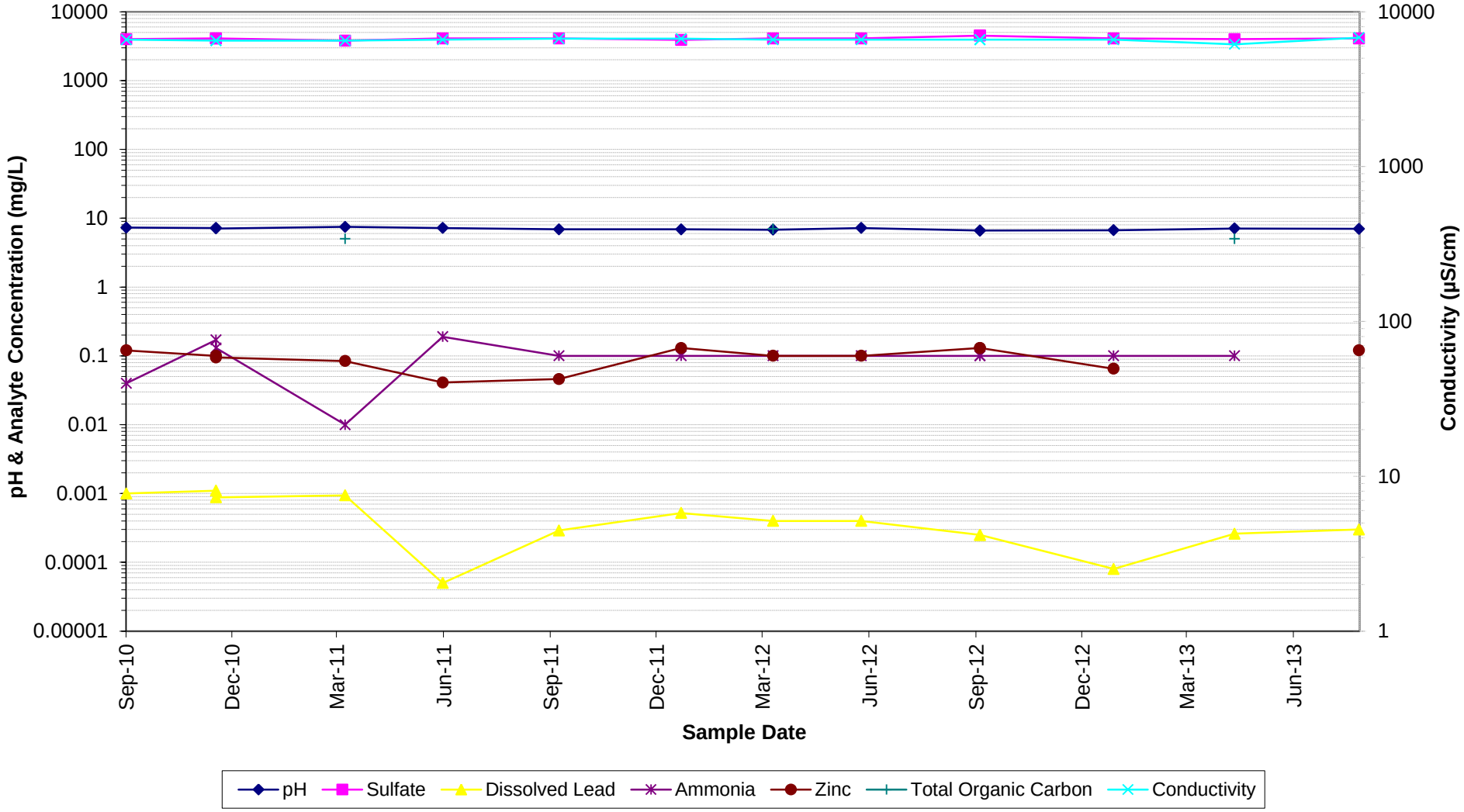


Figure 19 - Groundwater Trends - MB3

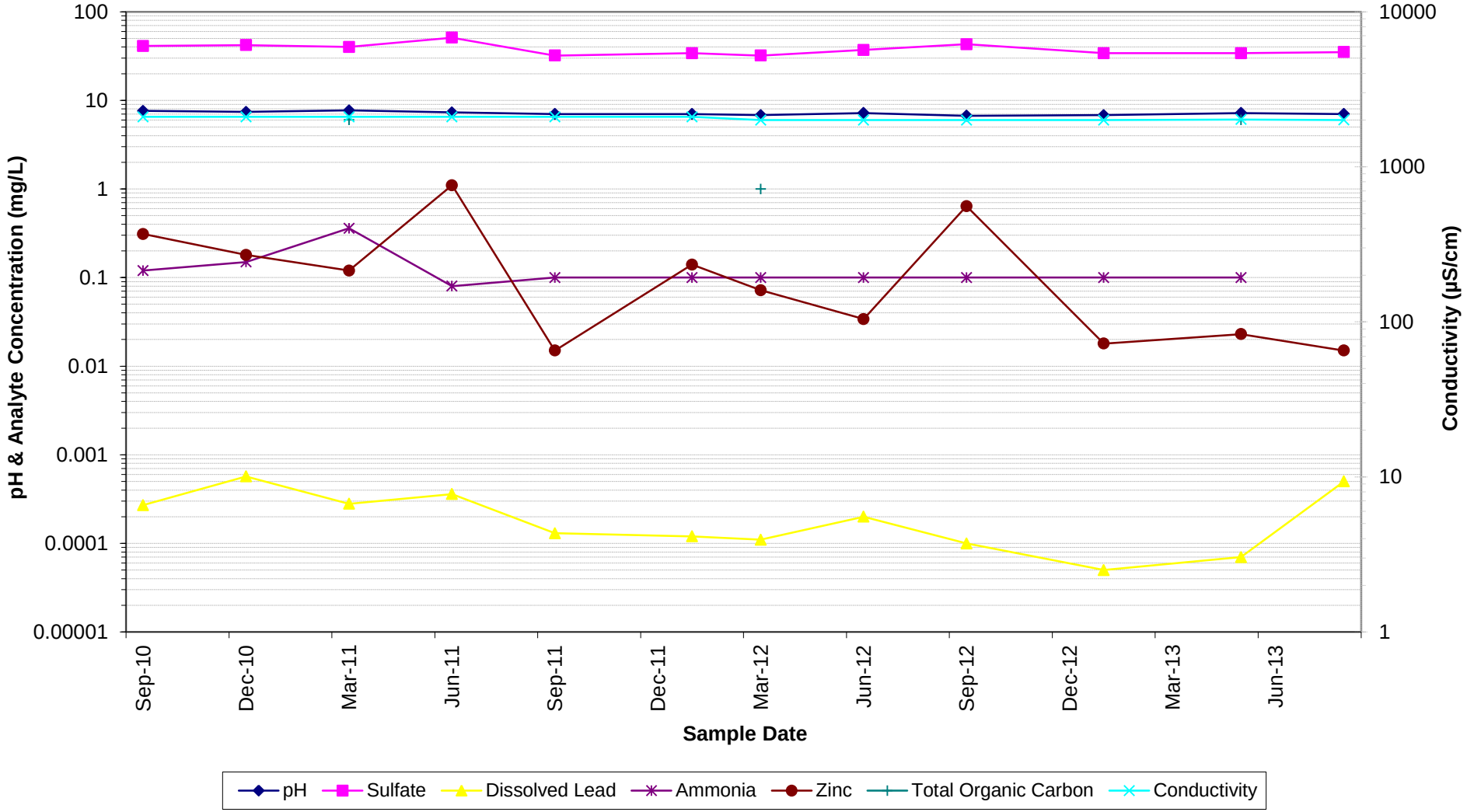


Figure 20 - Groundwater Trends - MB4

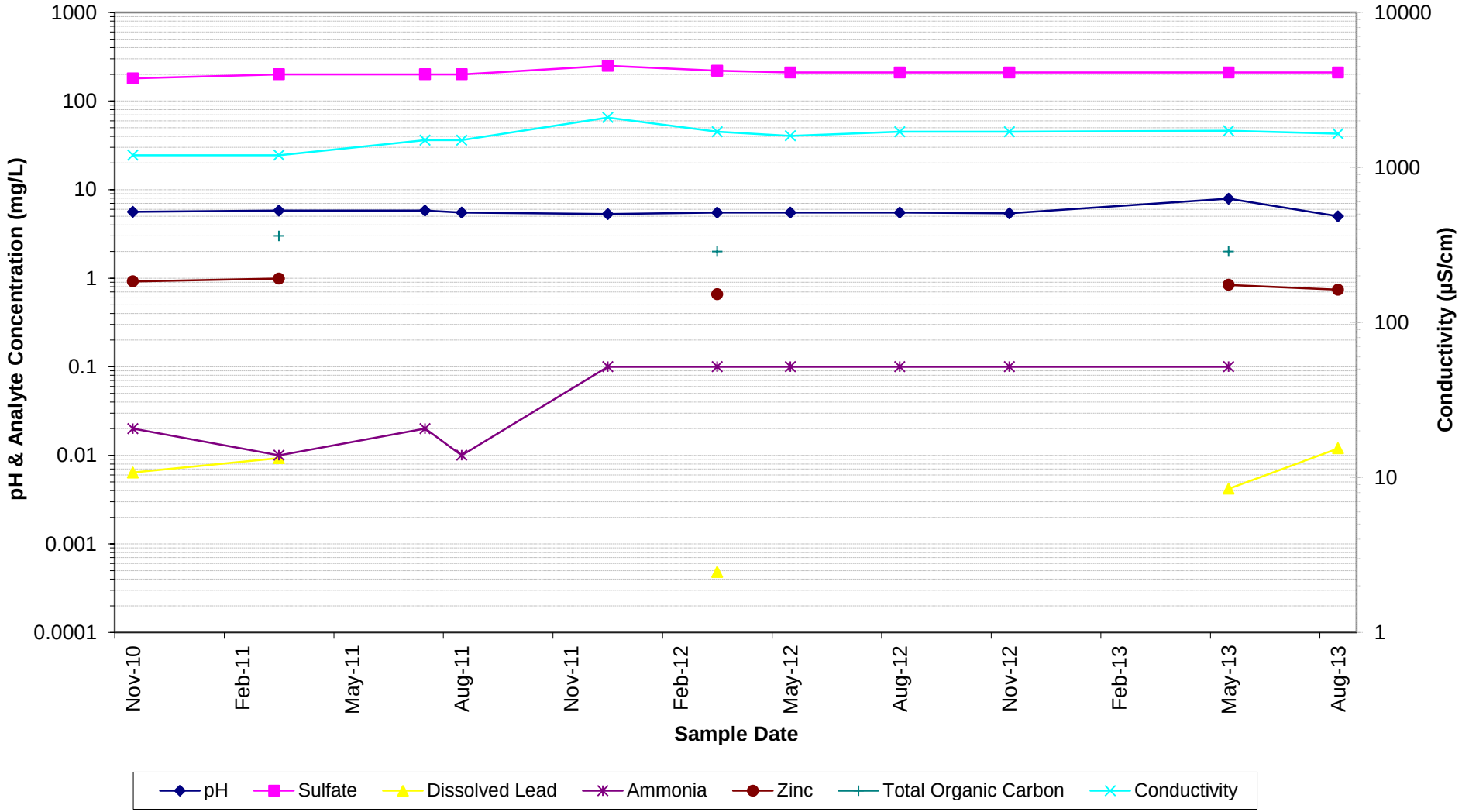


Figure 21 - Groundwater Trends - MB5

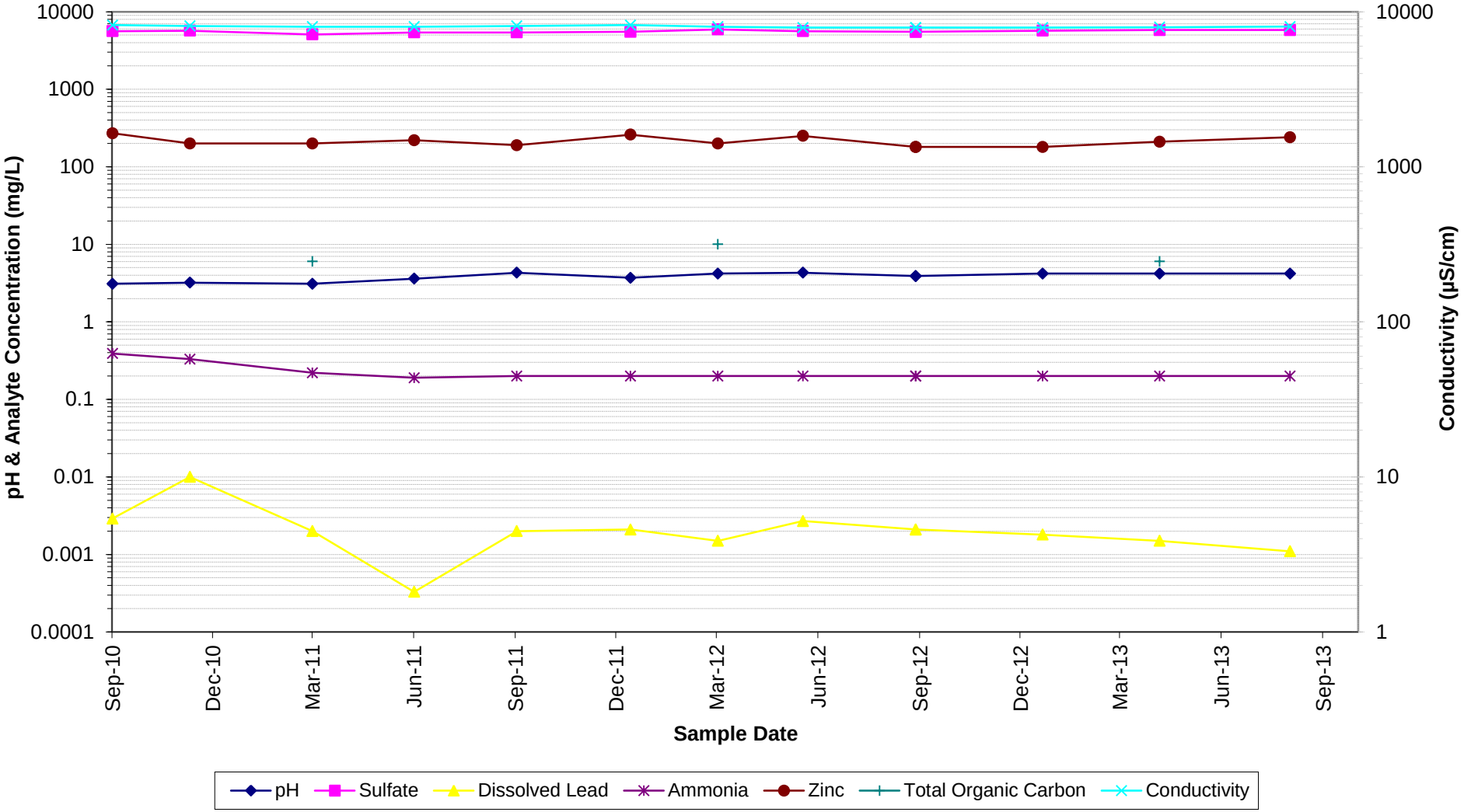


Figure 22 - Groundwater Trends - MB6

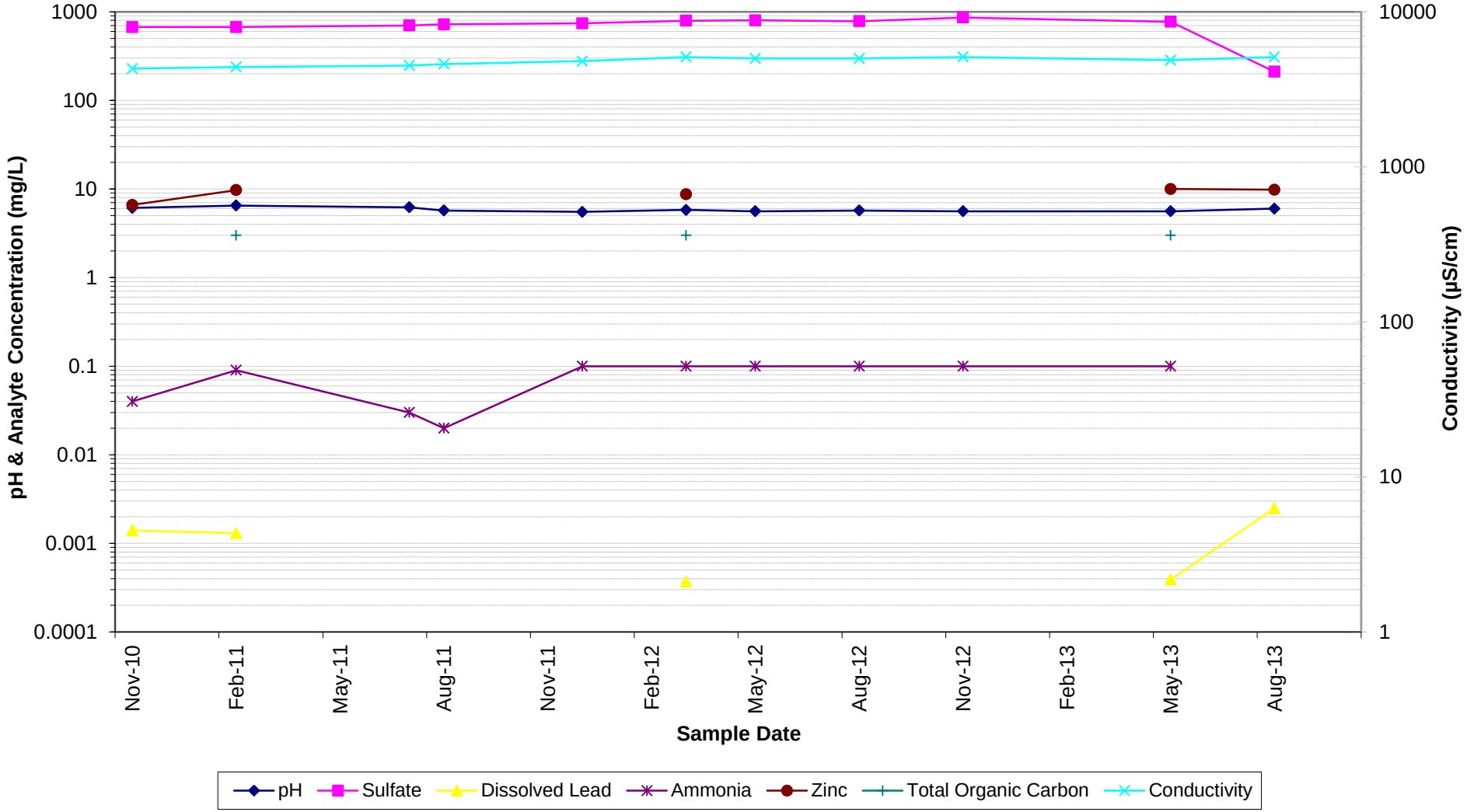


Figure 23 - Groundwater Trends - MB7

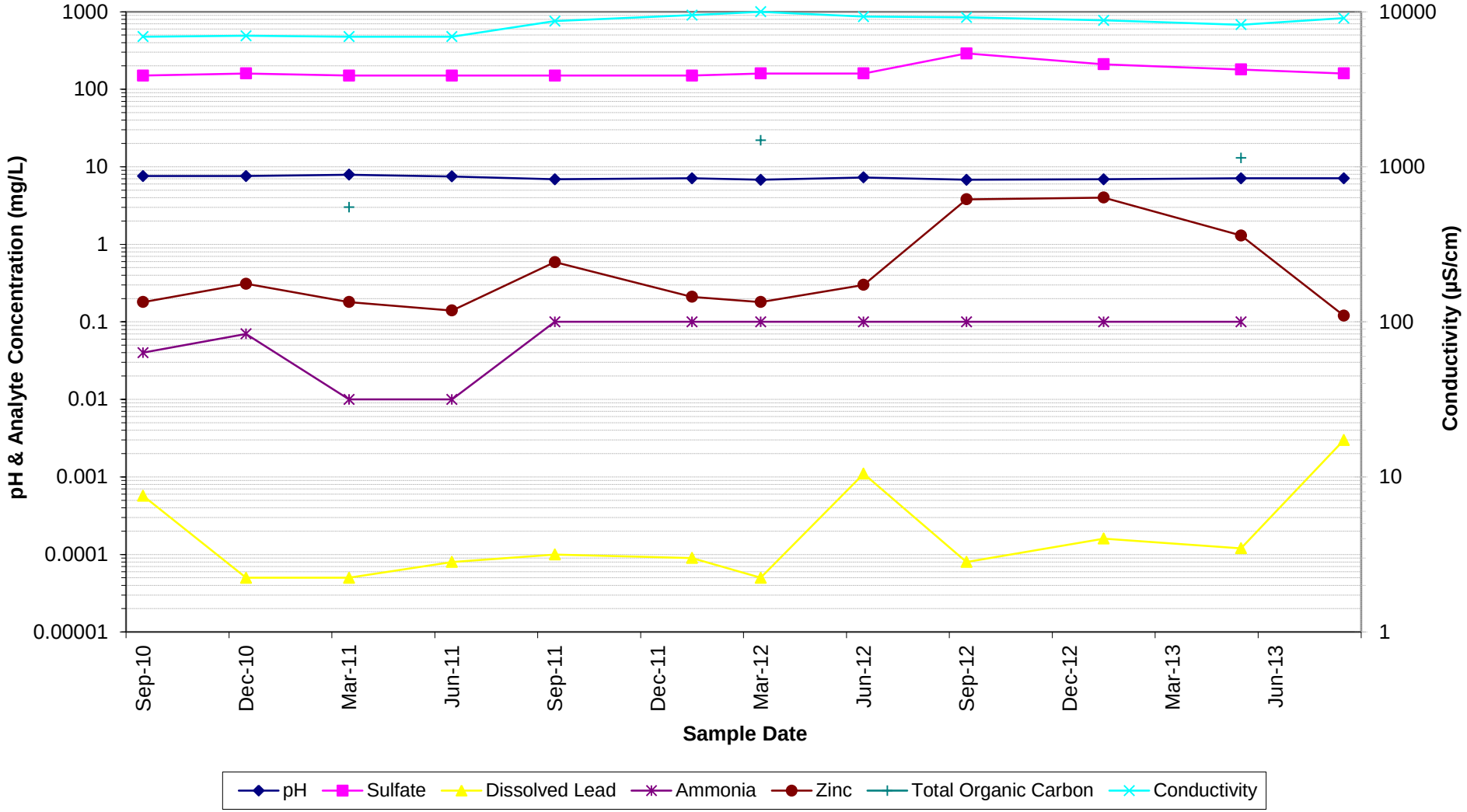


Figure 24 - Groundwater Trends - MB8

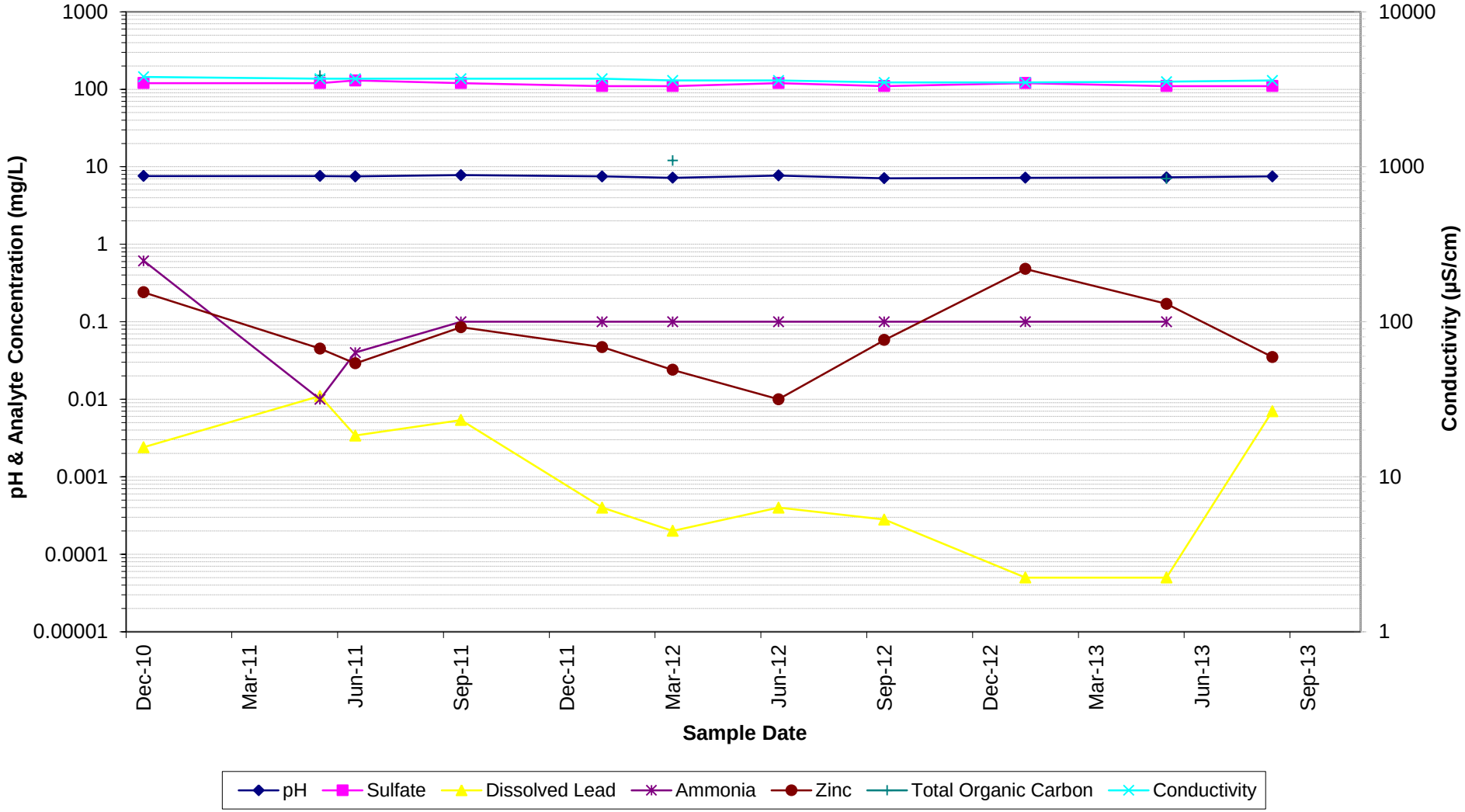


Figure 25 - Groundwater Trends - MB10

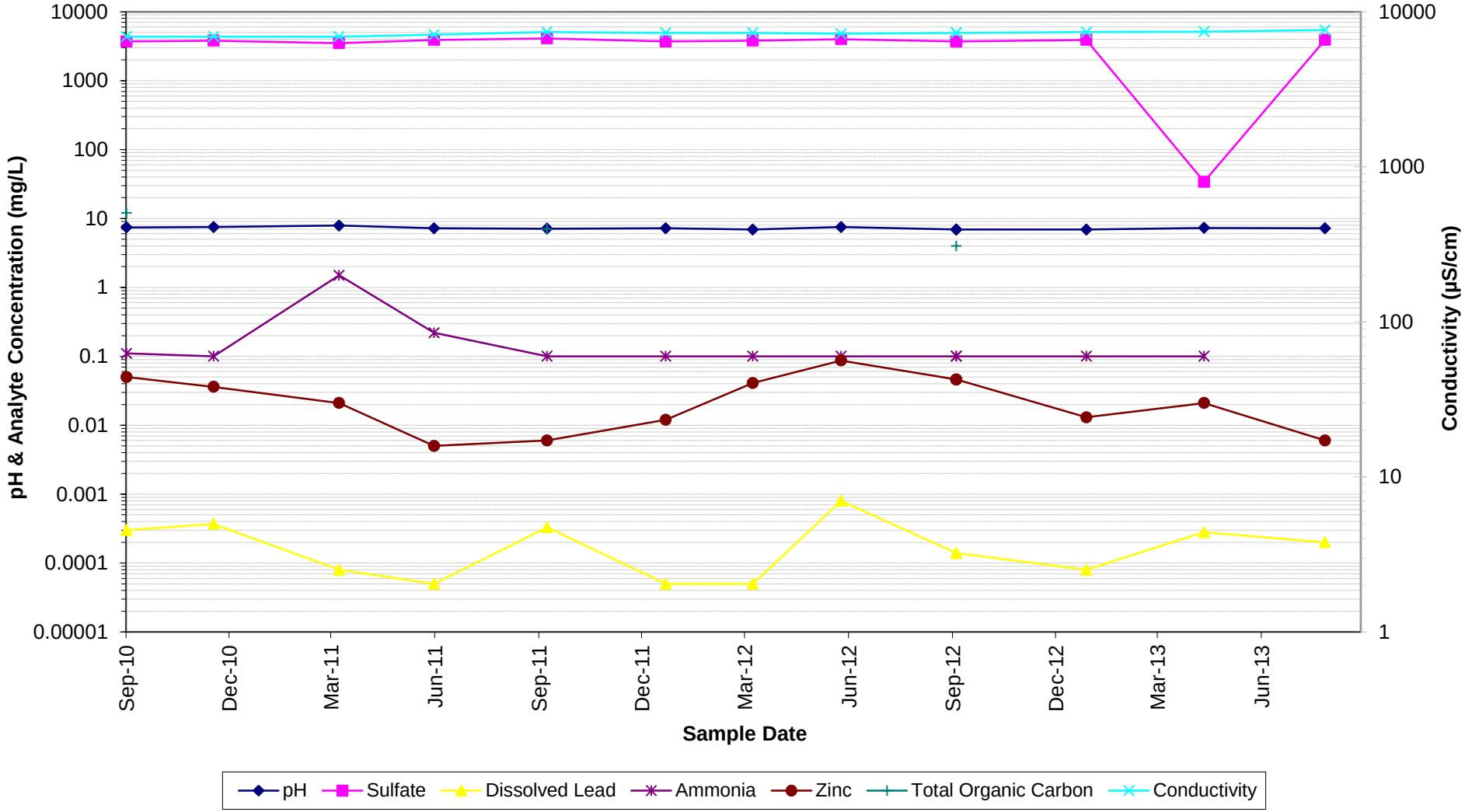


Figure 26 - Groundwater Trends - MB11

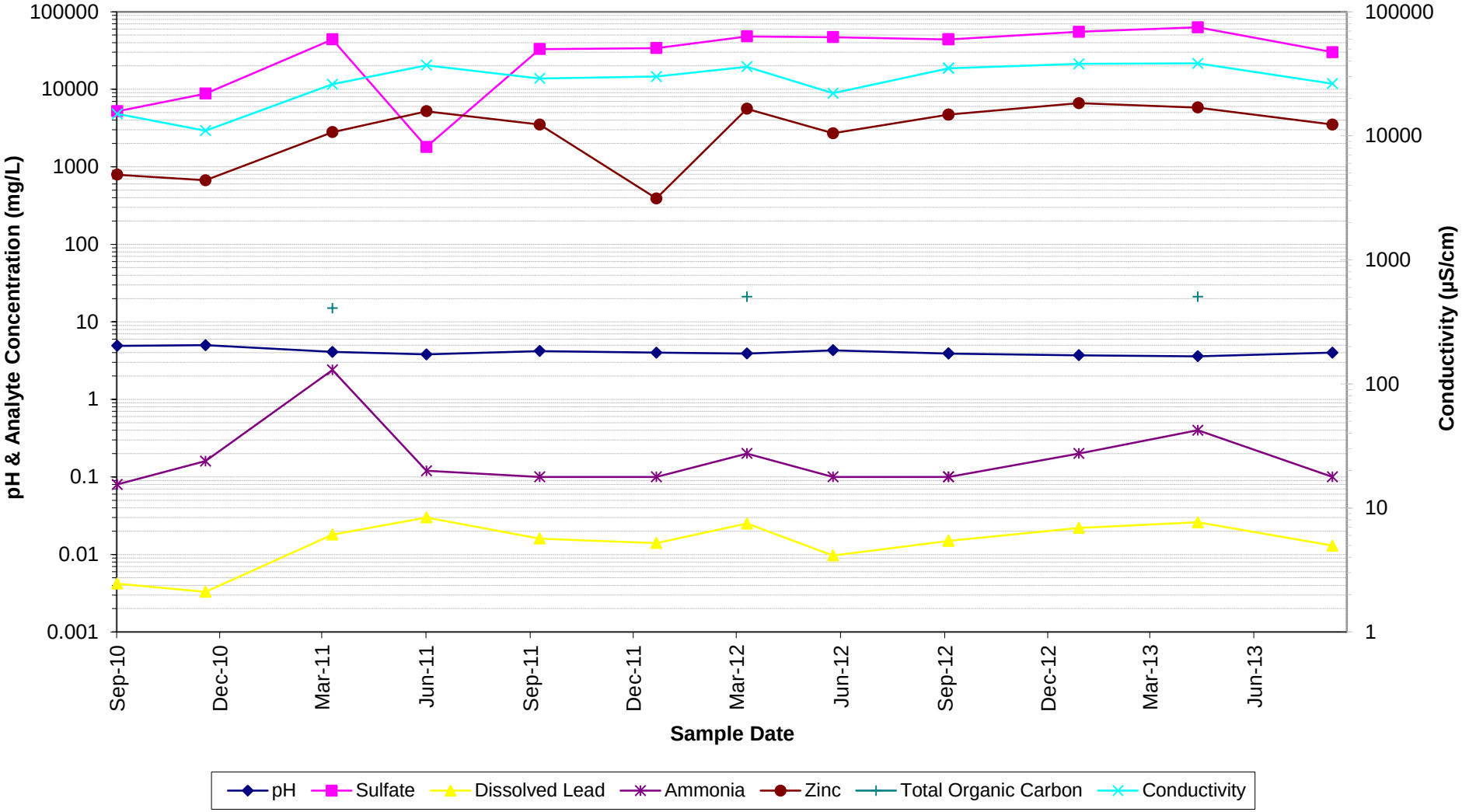


Figure 27 - Groundwater Trends - MB12

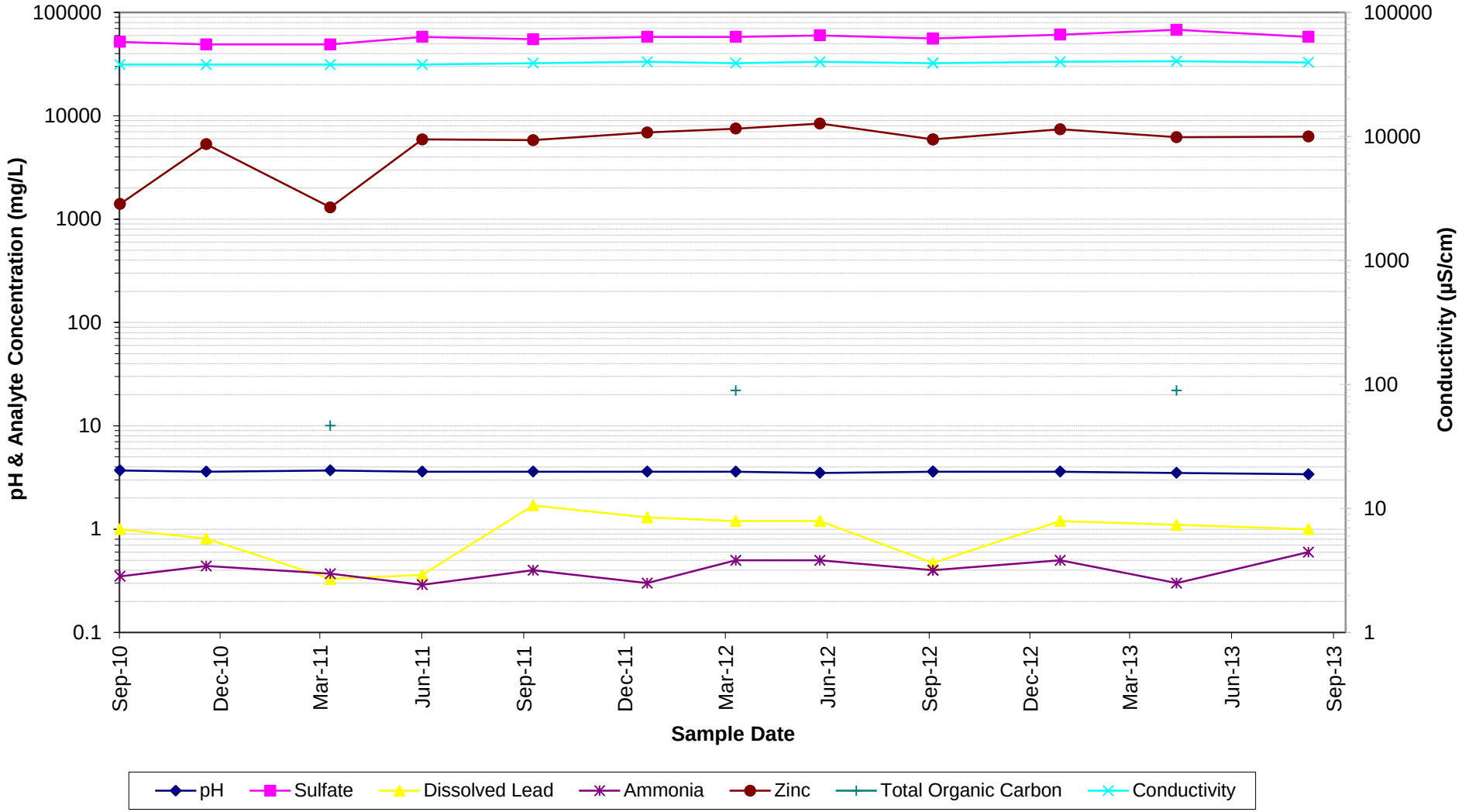


Figure 28 - Groundwater Trends - MB13

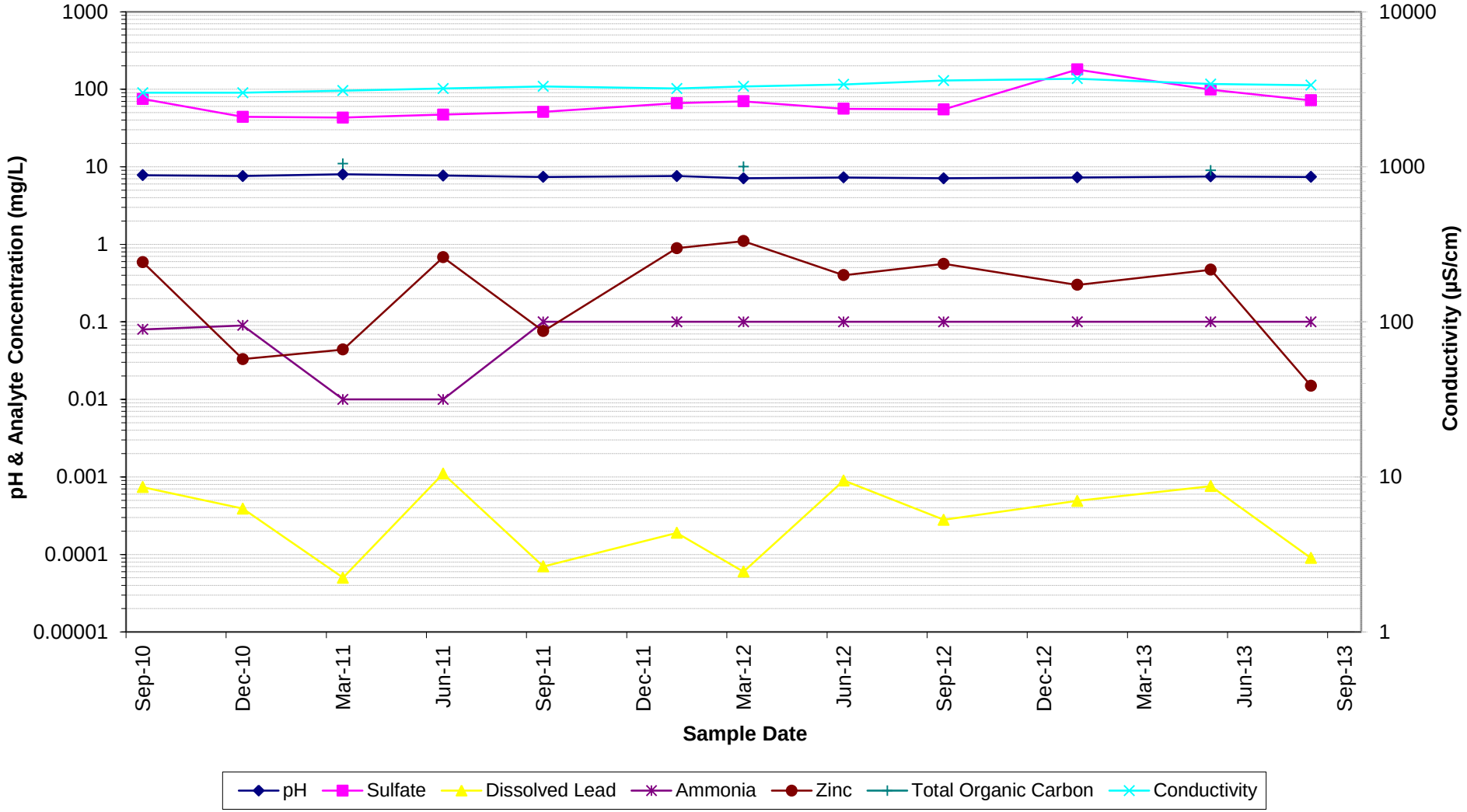


Figure 29 - Groundwater Trends - MB14

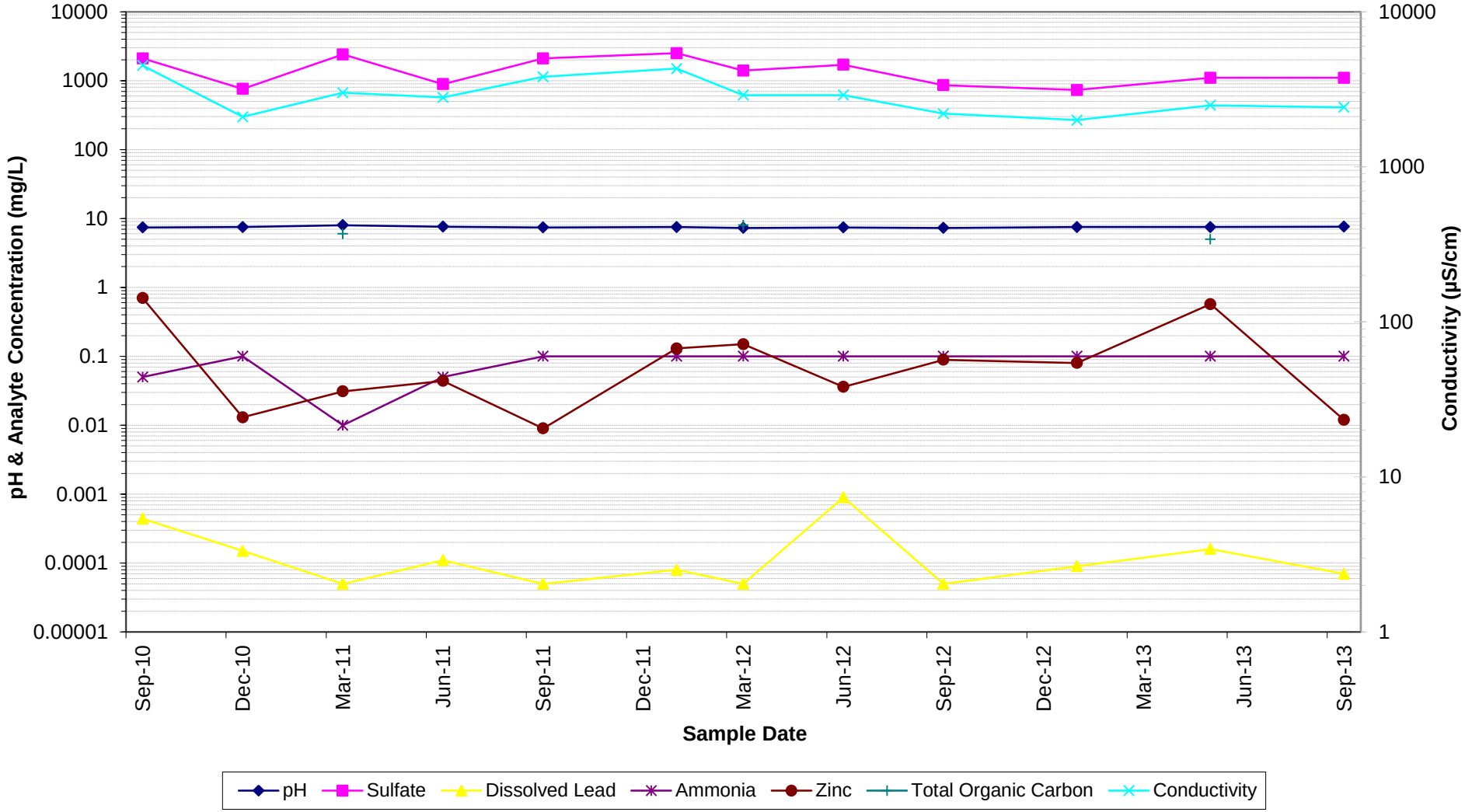


Figure 30 - Groundwater Trends - MB15

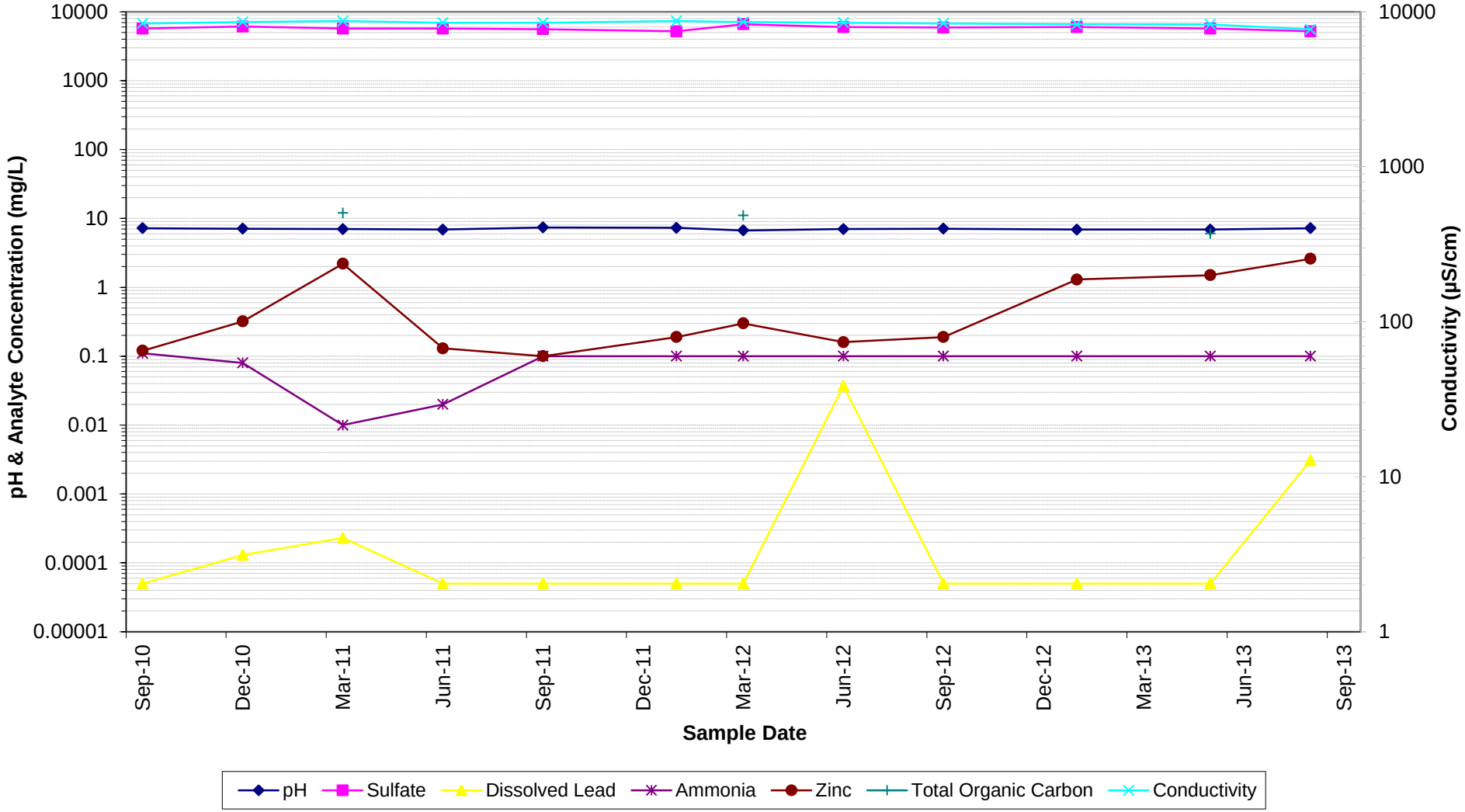


Figure 31 - Groundwater Trends - MB16

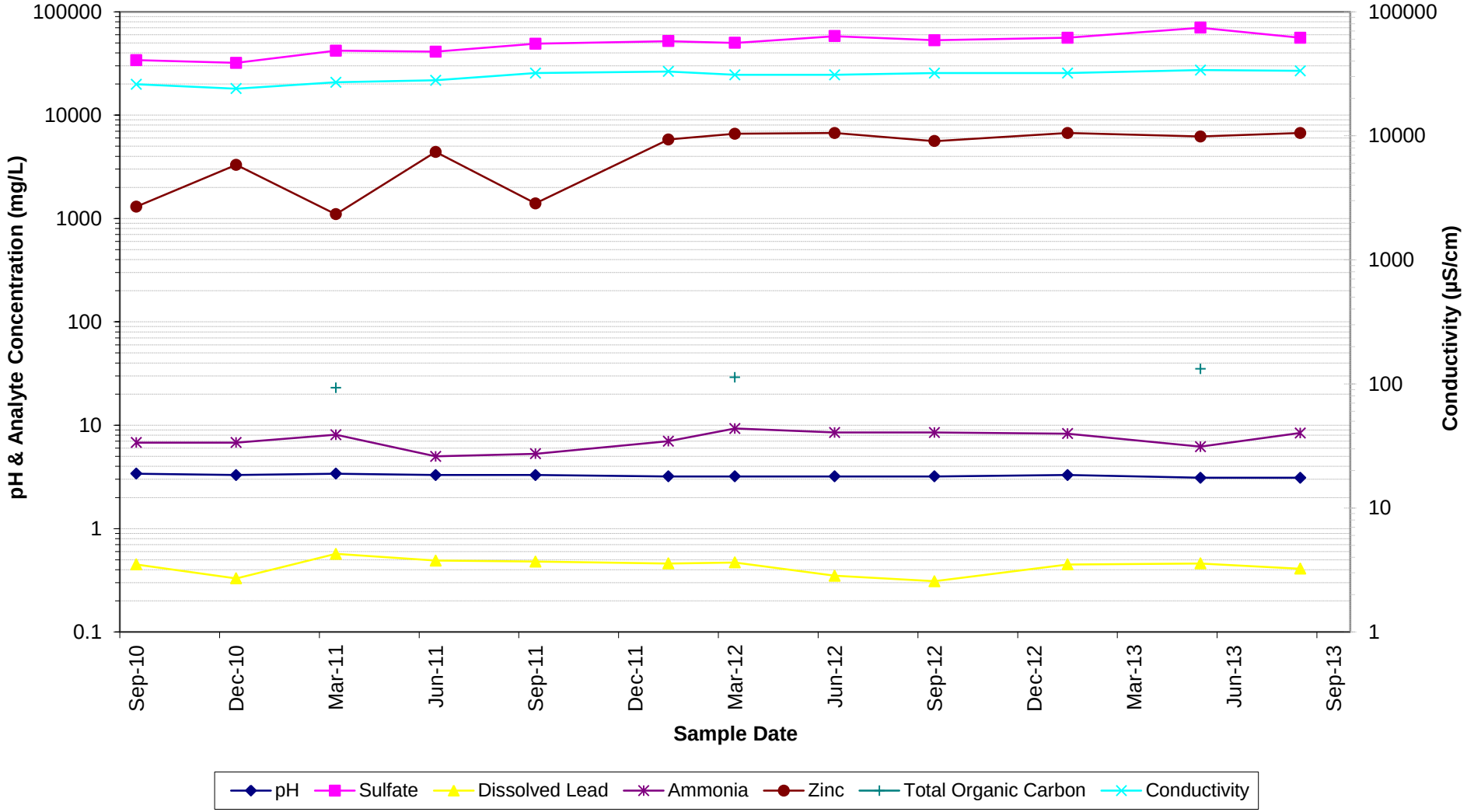


Figure 32 - Groundwater Trends - MB17

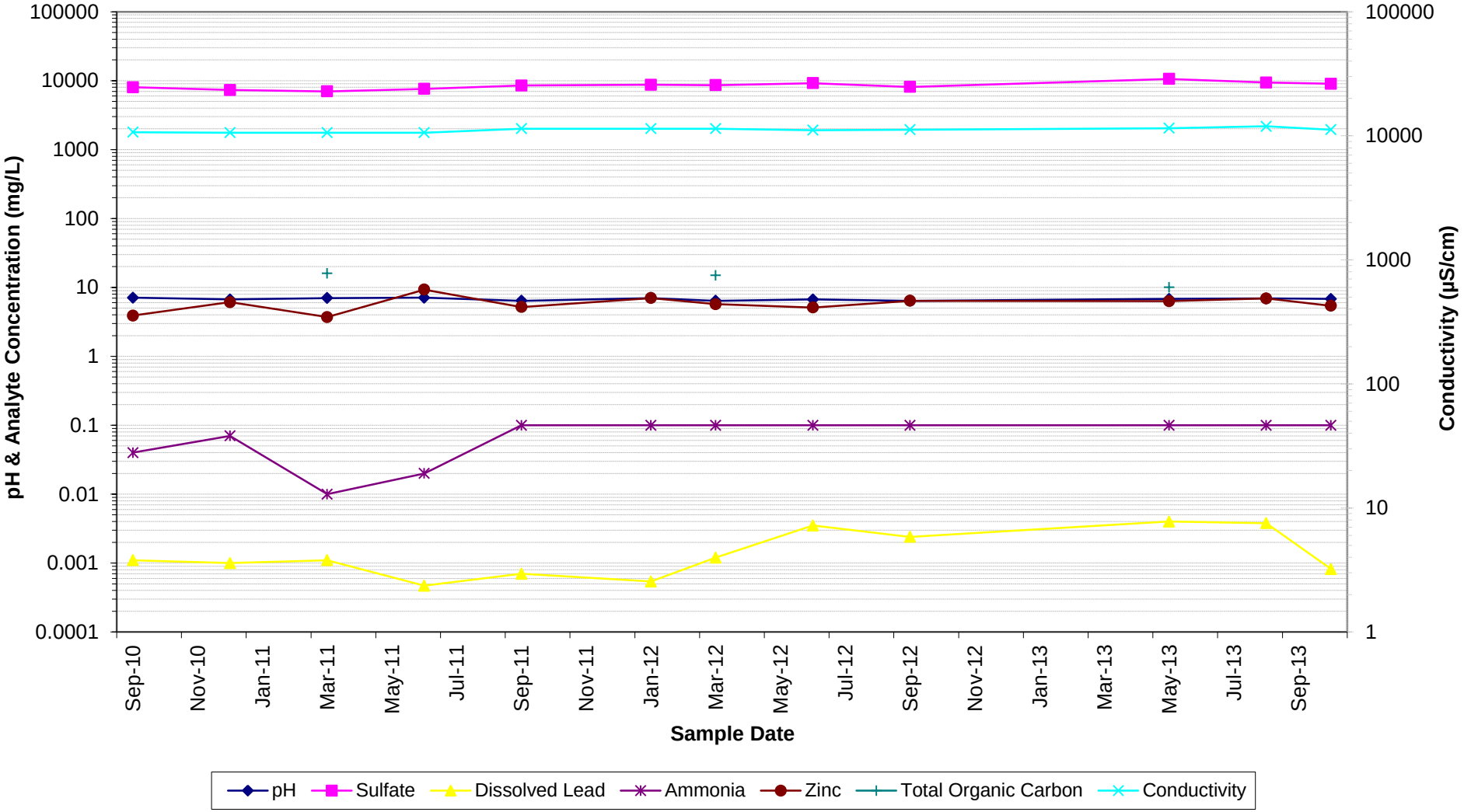


Figure 33 - Groundwater Trends - ED3B

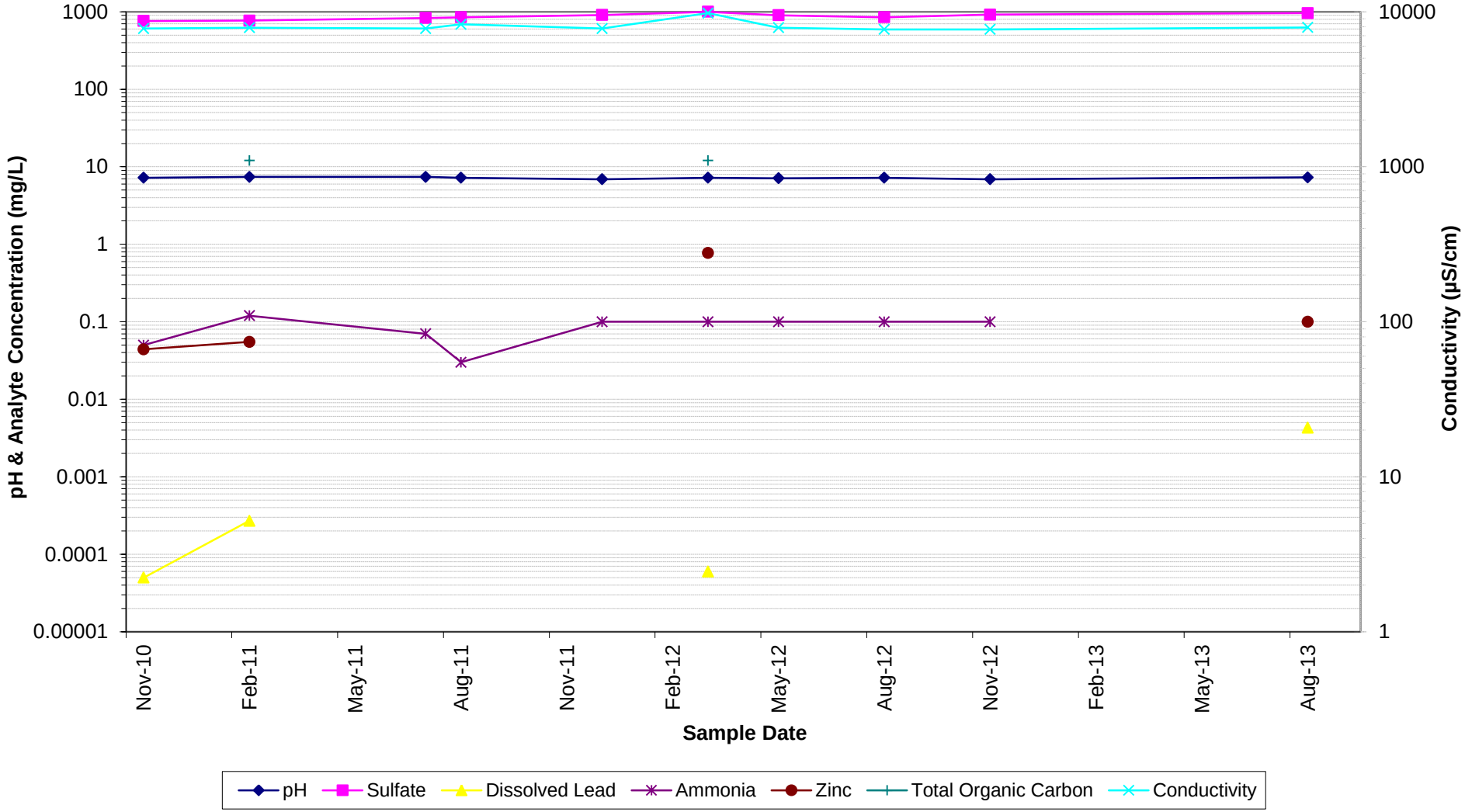


Figure 34 - Groundwater Trends - WM1

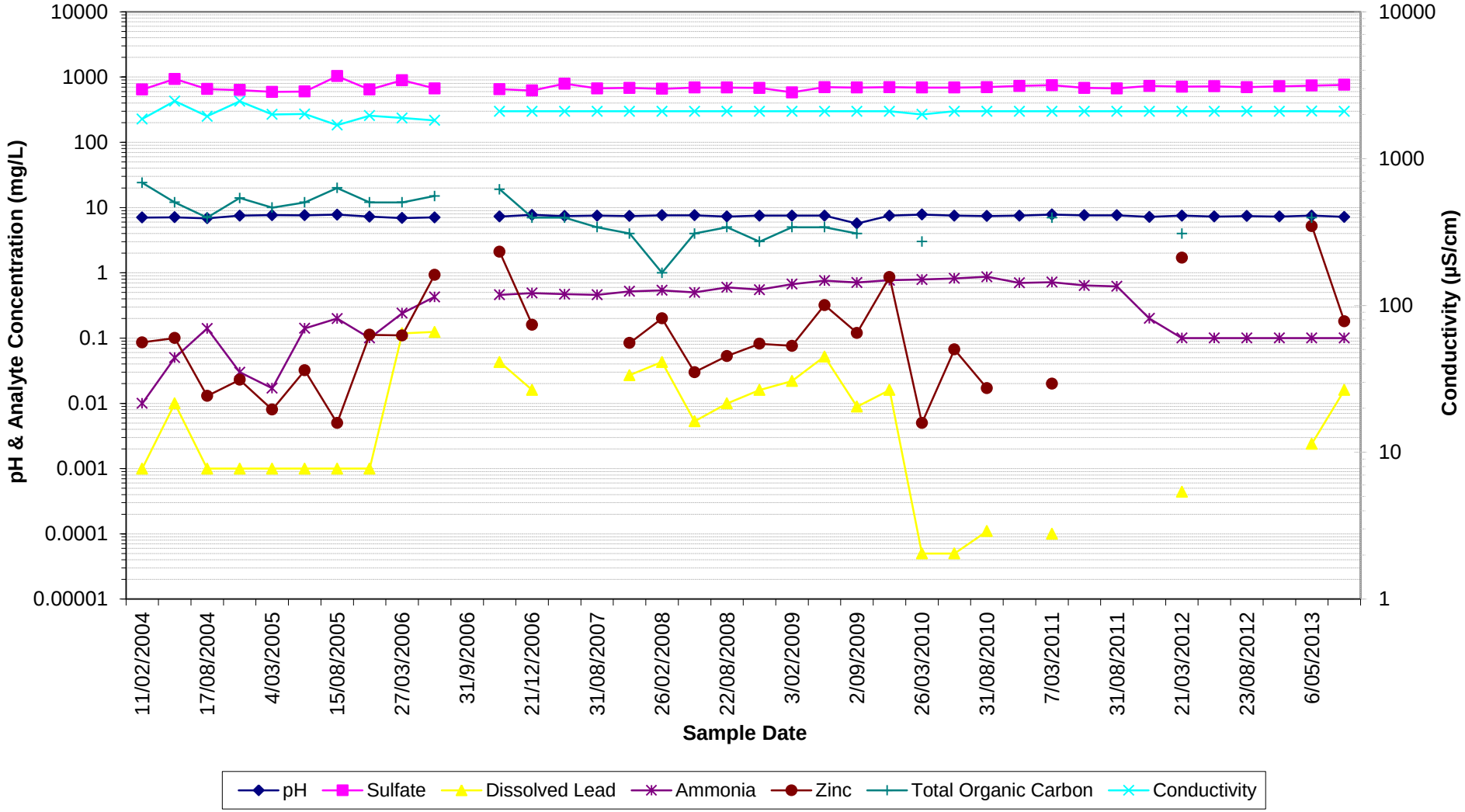


Figure 35 - Groundwater Trends - WM3

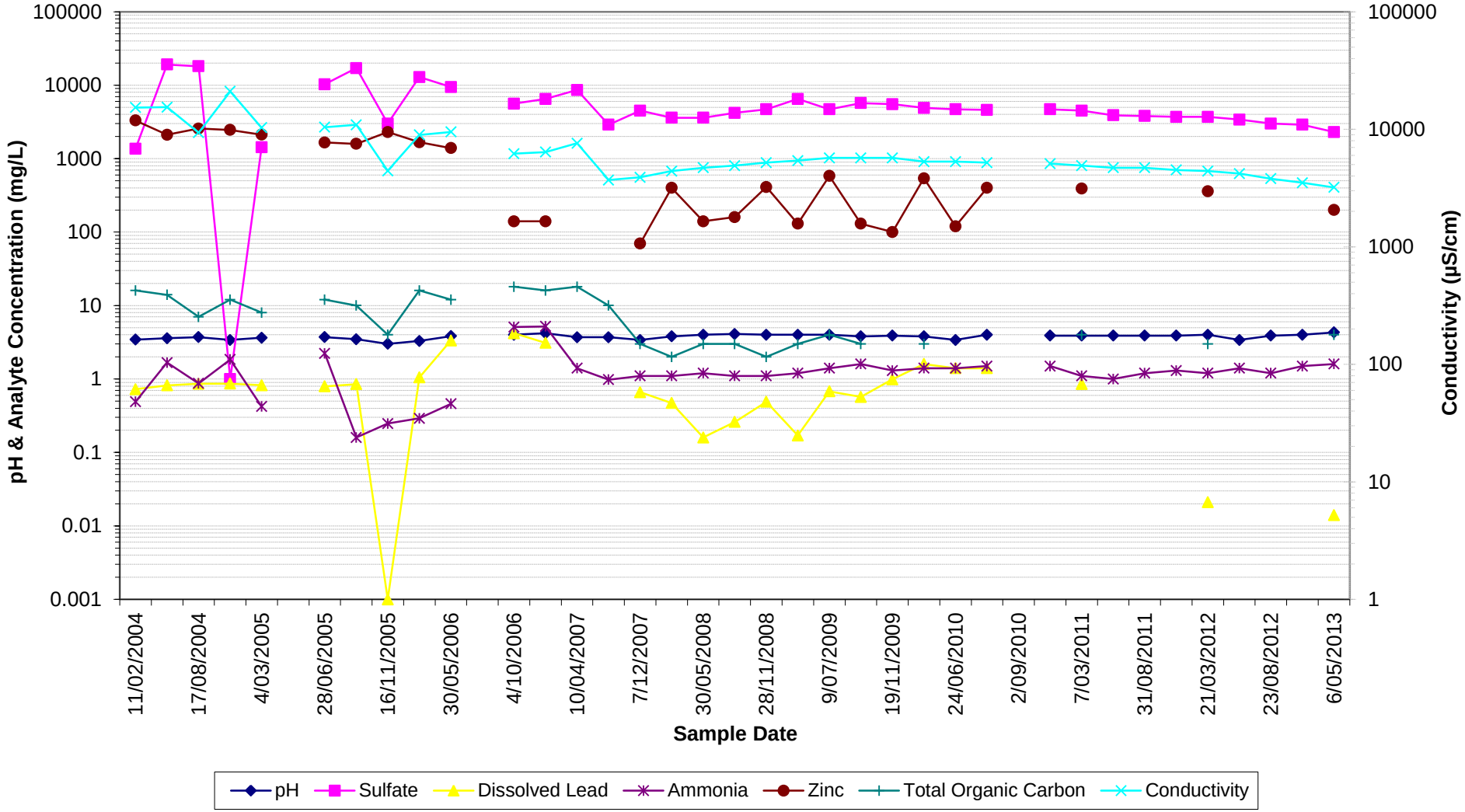


Figure 36 - Groundwater Trends - WM4

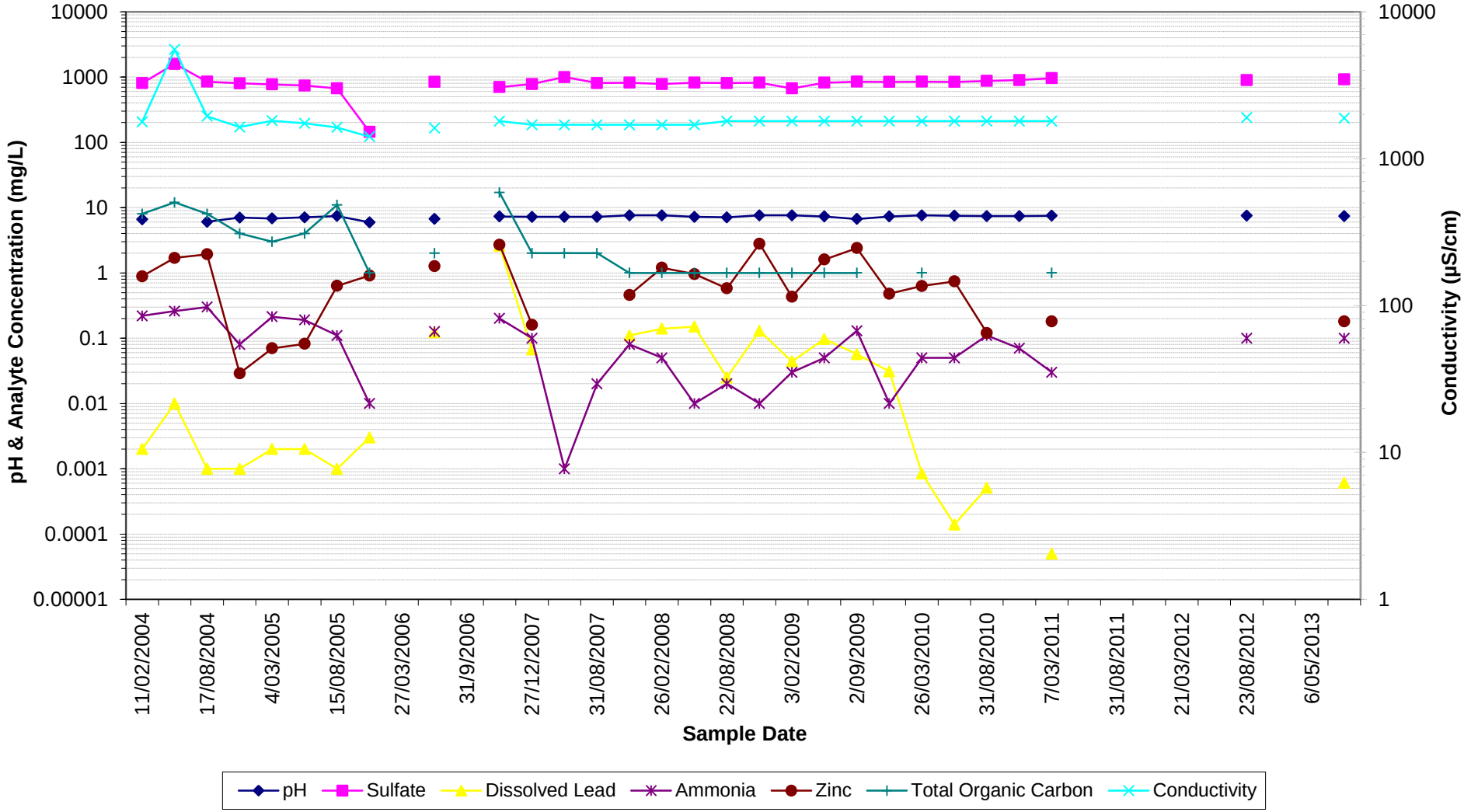


Figure 37 - Groundwater Trends - WM5

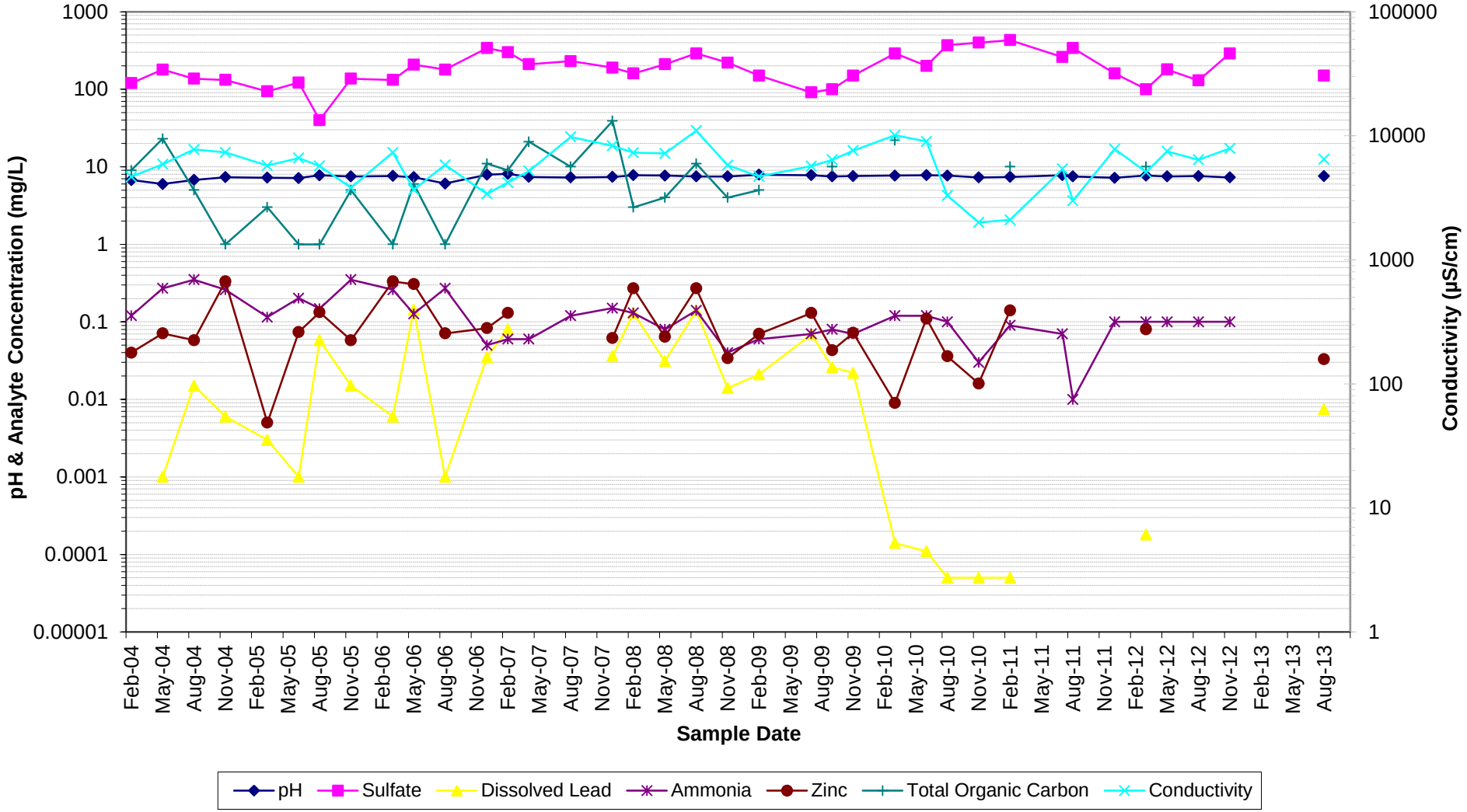


Figure 38 - Groundwater Trends - WM6

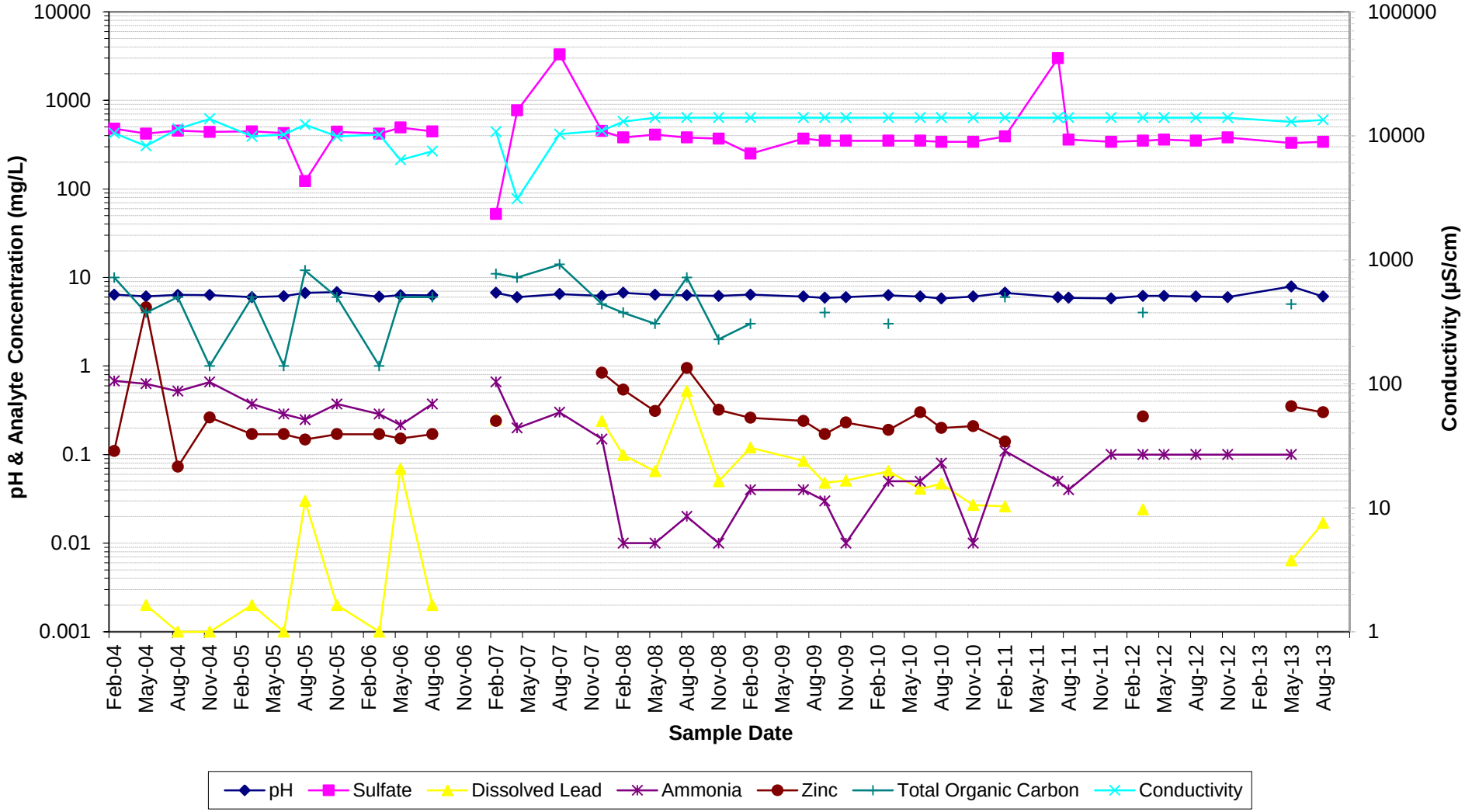


Figure 39 - Groundwater Trends - MW8S

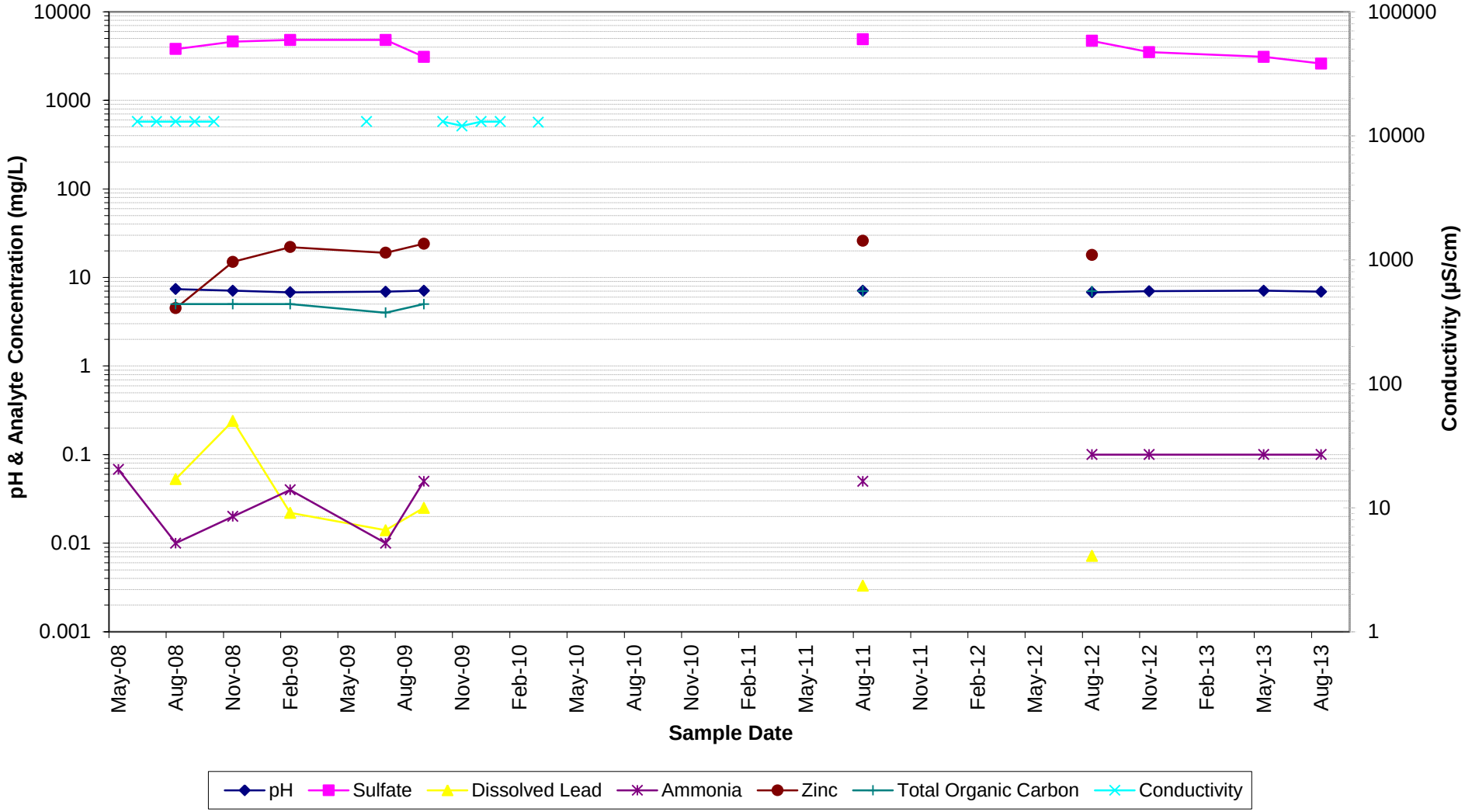


Figure 40 - Groundwater Trends - MW8D

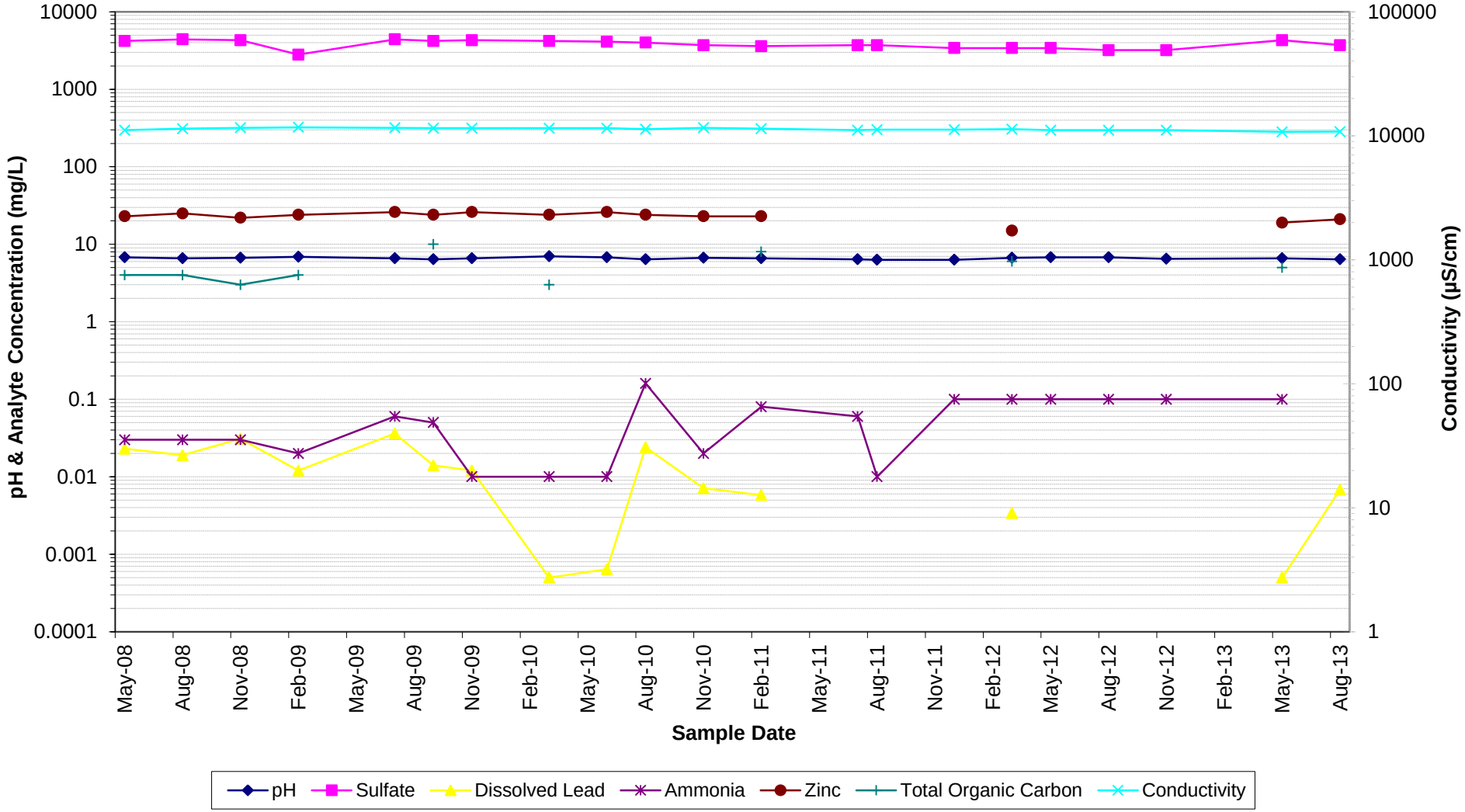


Figure 41 - Groundwater Trends - MW9S

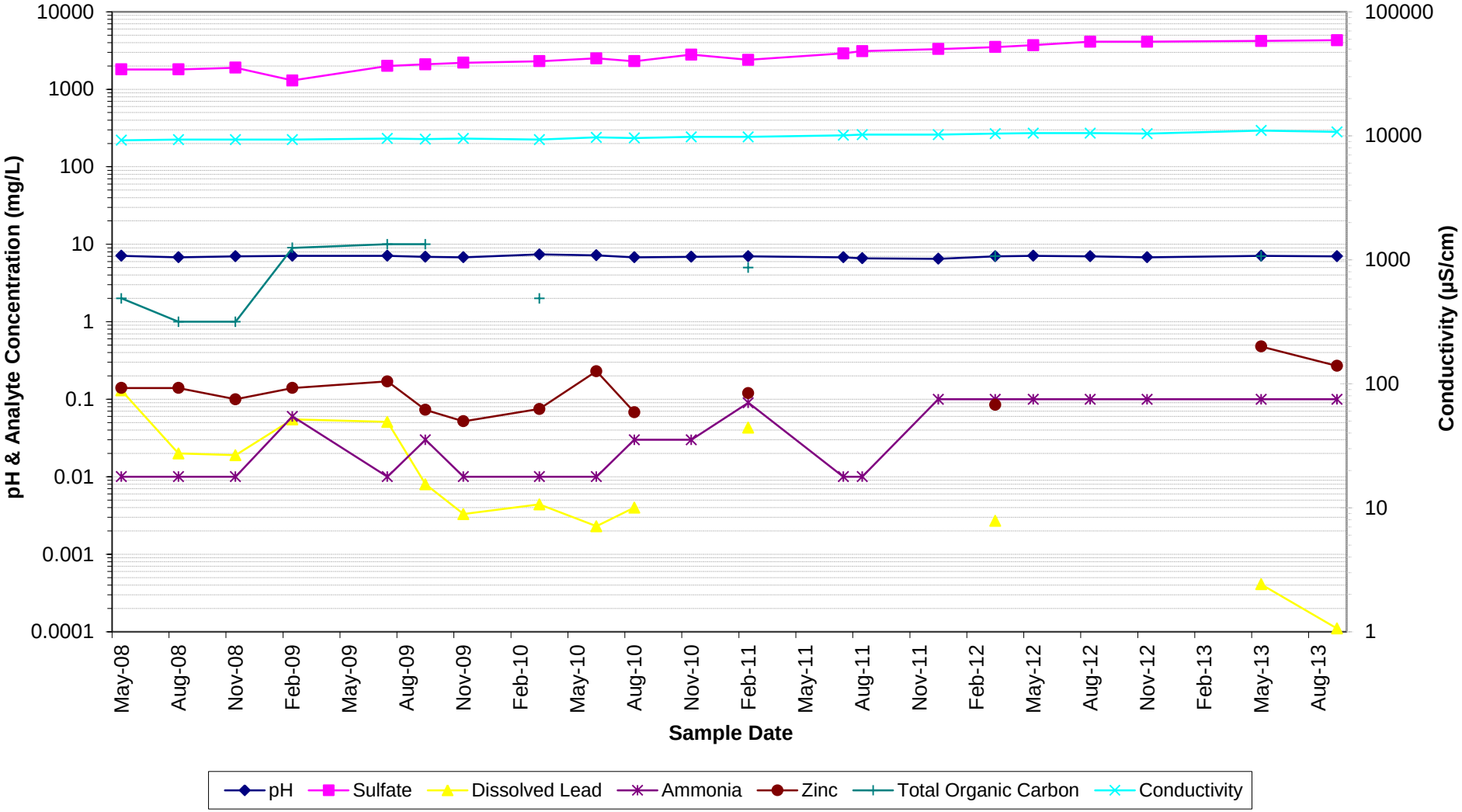


Figure 42 - Piezometer Levels - P44 - P100

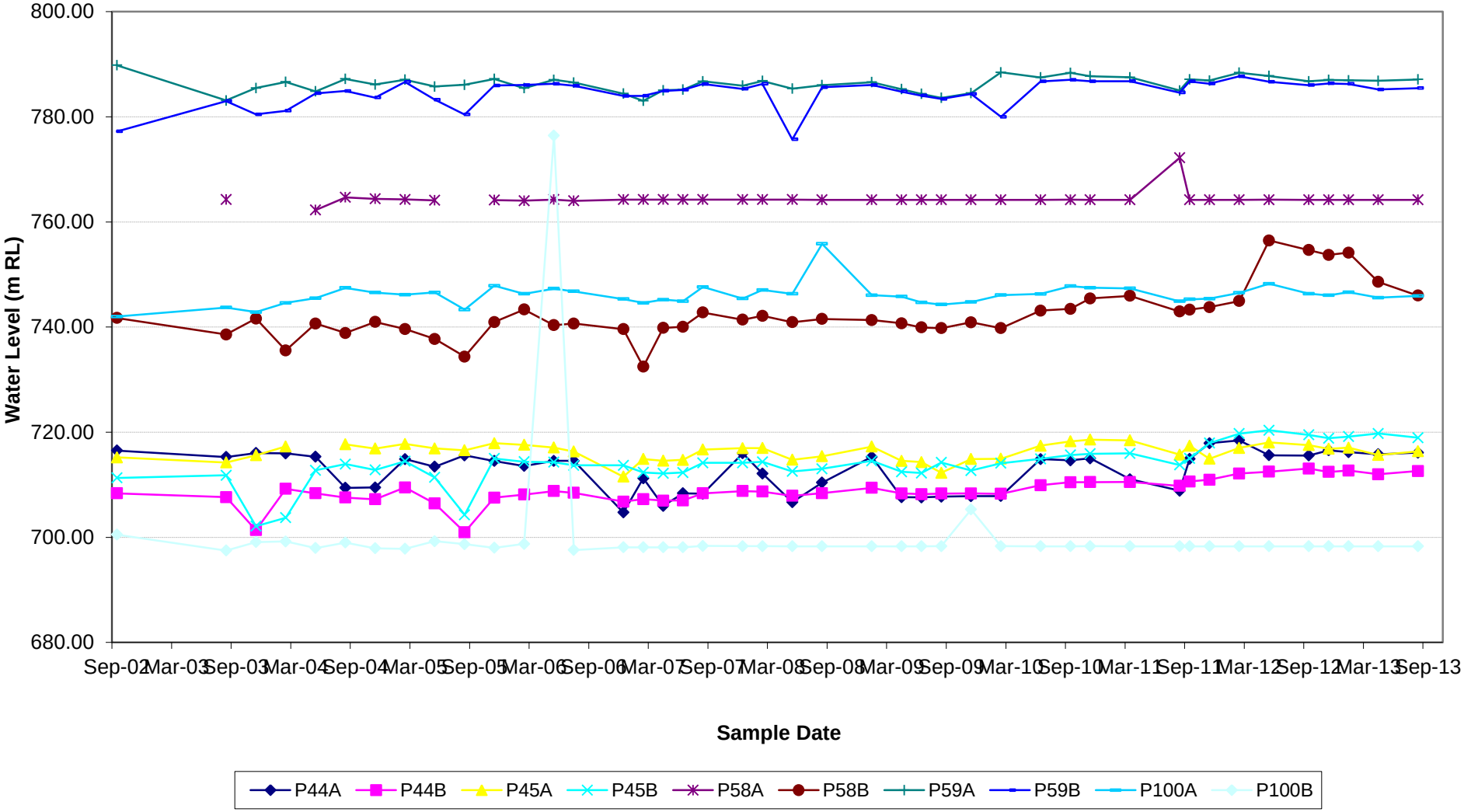


Figure 43 - Evaporation Dam 3 Volume

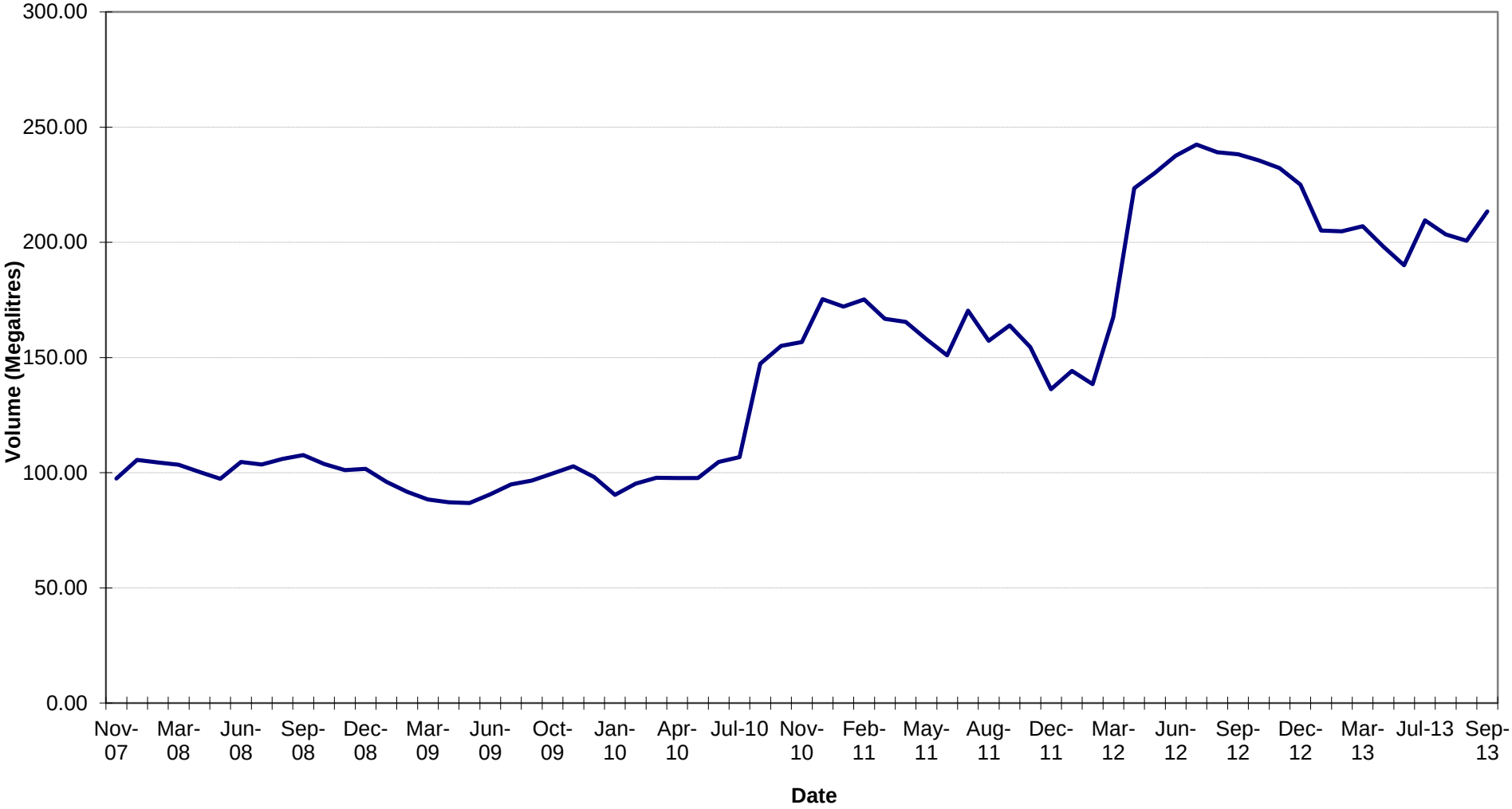


Figure 44 - IMF Surface Water Trends - Site 110

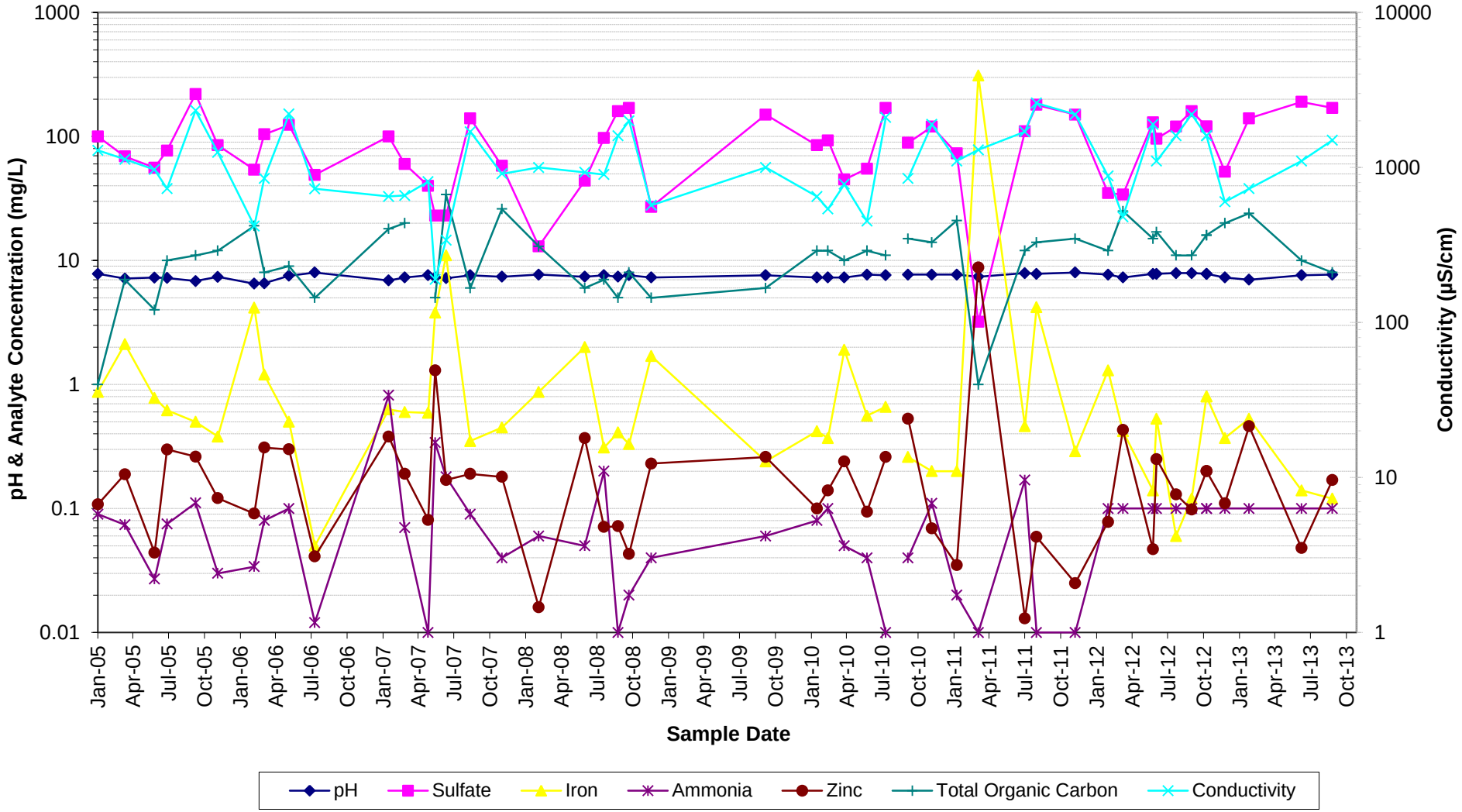


Figure 45 - IMF Surface Water Trends - Site 130

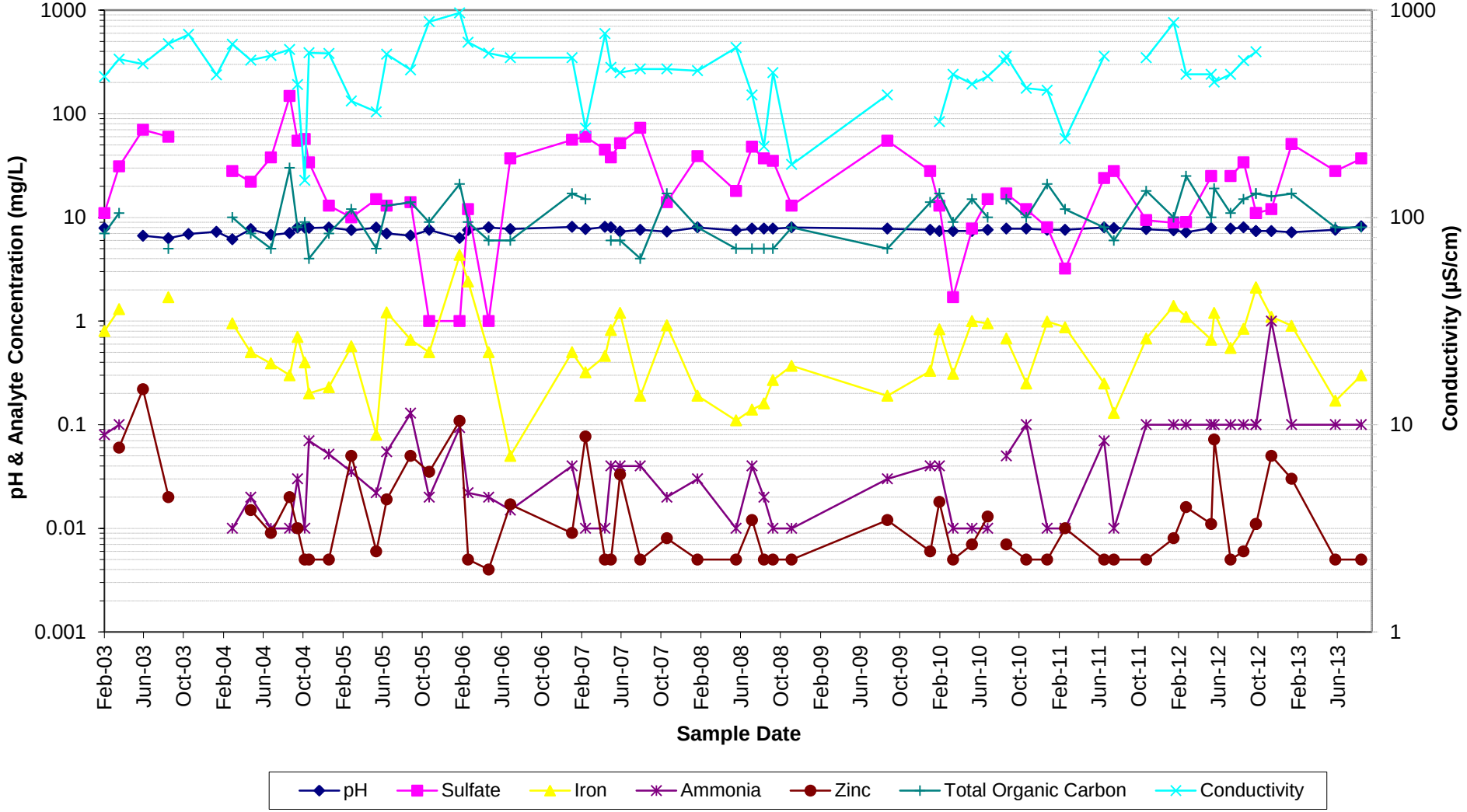


Figure 46 - IMF Surface Water Trends - Site 150

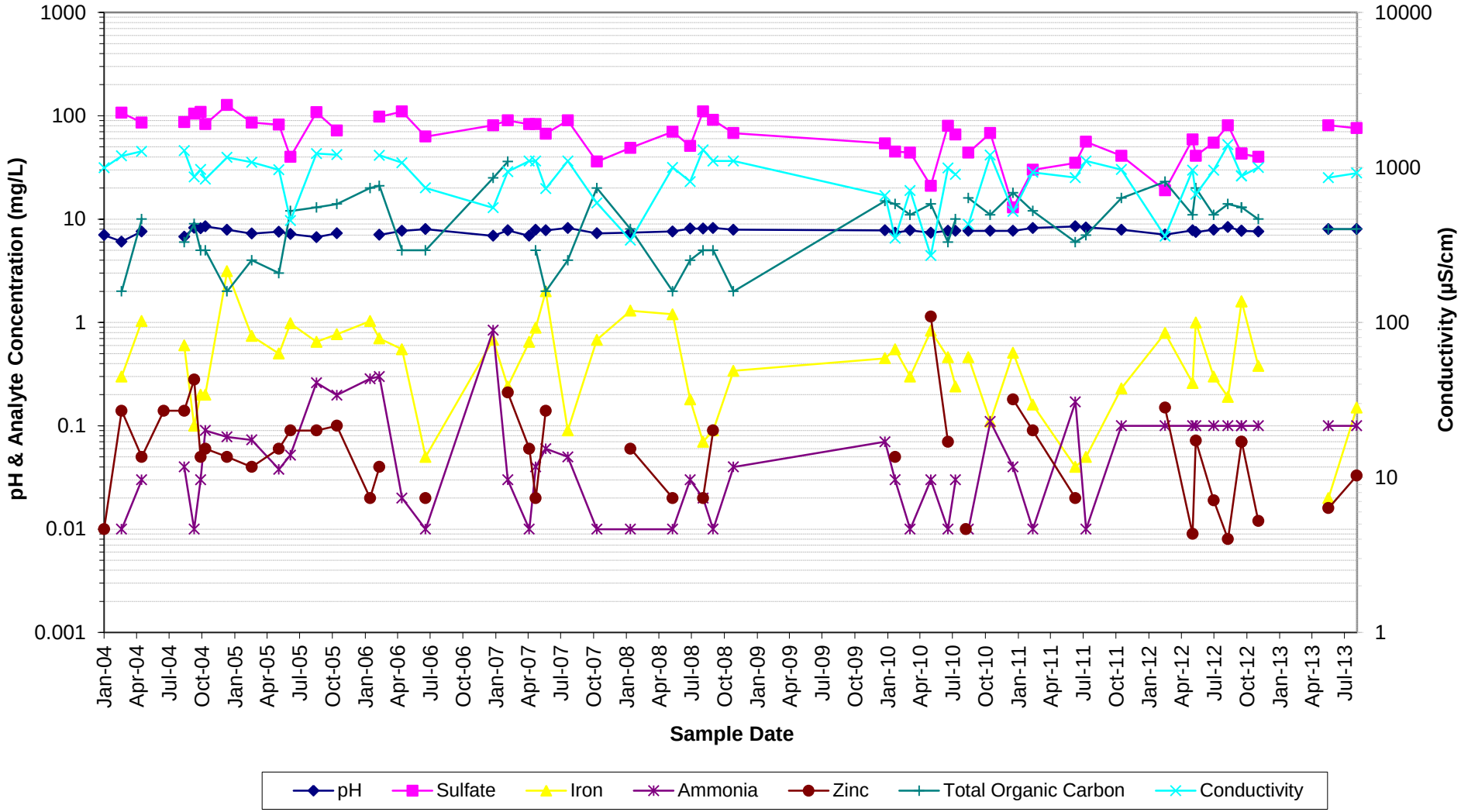


Figure 47 - IMF Surface Water Trends - First Flush

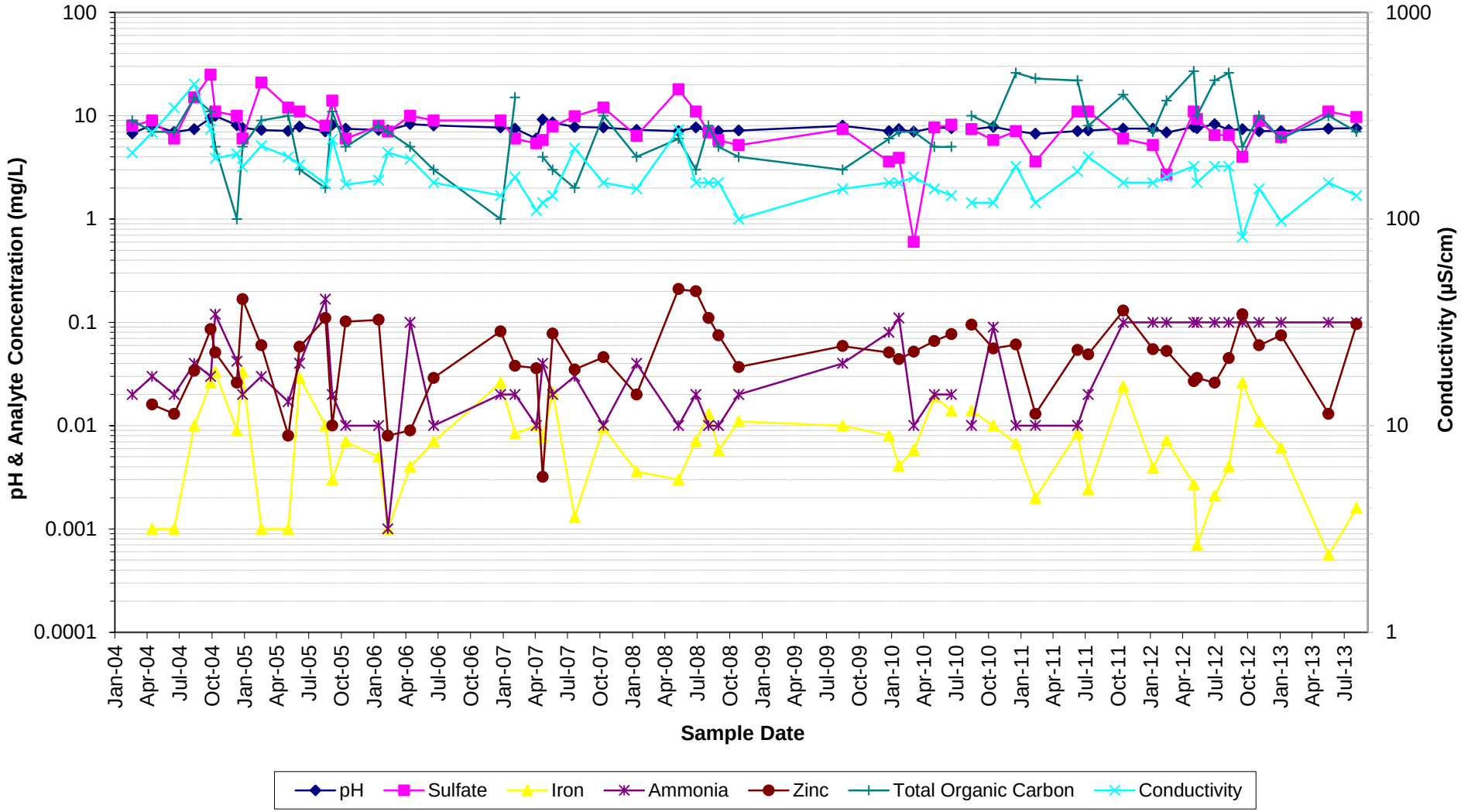
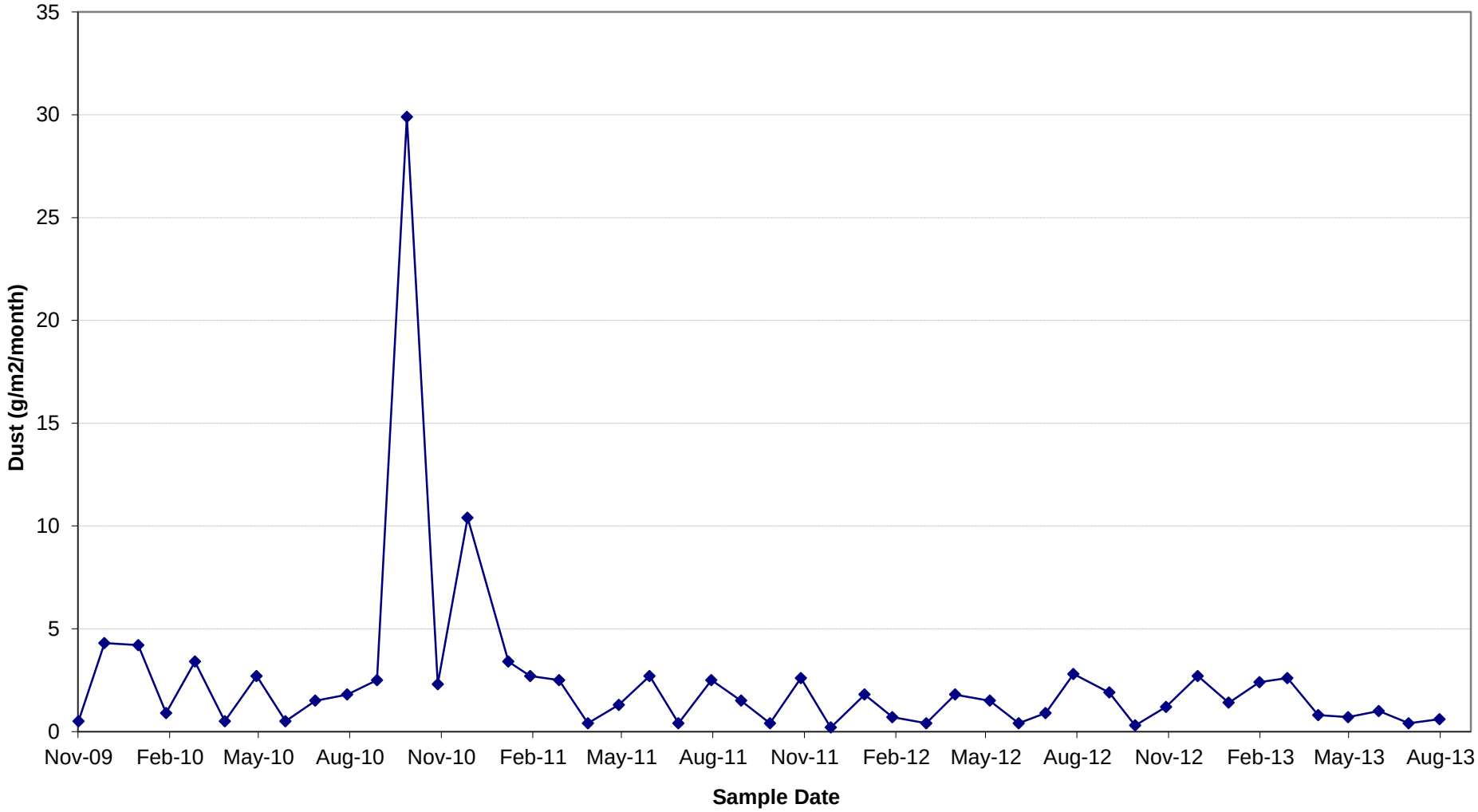


Figure 48 - IMF Depositional Dust Trends - DG18



TABLES

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T-1 - Complaints Register

No.	Date	Time	Complaint	Name of Complainant	Location	VES Response
1	20/09/2012	9.20 am	Odour			Phoned complainant
2	29/10/2012	9.30 am	Odour			Phoned complainant
3	3/01/2013	9.10 am	Odour			Phoned complainant
4	16/01/2013	9.30 am	Odour			Phoned complainant
5	21/01/2013	6.15 pm	Odour			Phoned complainant
6	9/02/2013	7.50 am	Odour			Phoned complainant
7	21/03/2013	10:00am	Odour			Phoned complainant
8	21/03/2013	9.15 am	Odour			Phoned complainant
9	3/04/2013	9.00 am	Odour			Phoned complainant
10	8/04/2013	9.25 am	Odour			Phoned complainant
11	9/04/2013	8.30am	Odour			Phoned complainant
12	10/04/2013	5:00-8:00 am	Odour			Phoned complainant
13	10/04/2013	5:00-8:00 am	Odour			Phoned complainant
14	22/04/2013	9.00 am	Odour			Phoned complainant
15	22/04/2013	10.30 am	Odour			Phoned complainant
16	9/05/2013	8.00 am	Odour			Phoned complainant
17	6/06/2013	8:00am	Odour			Phoned complainant
18	11/07/2013	11:14am	Odour			Phoned complainant
19	11/07/2013	7:00pm	Odour			Phoned complainant
20	13/07/2013	8.10 am	Odour			Phoned complainant
21	25/07/2013	9.50 am	Odour			Phoned complainant
22	26/08/2013	7-9:05 am	Odour			Phoned complainant

T10.1 - Groundwater Results - MB 1

EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information											Analytical Information													
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MB1	11.03	TH	6.47	1033	16.3	2.97		27.4	770.11	915127	251	0.1	251	0.1	100	1000	100	54	3.9	34	7.2	150	720
		7/05/2013	MB1	14:15	DS	6.98	1157	16.5	3.31		26.31	771.20	937886	270	0.1	270	0.1	100	1157	110	58	4.4	35	7.4	190	810
		13/08/2013	MB1	13:40	DS	6.97	1252	15.7	5.14		25.71	771.80	951360	329	0.1	329		410	1252	130		5.2	41	7.6	240	880
'<' removed from <LOR values																										
2012/13	Minimum					6.47	1033	15.7	2.97		25.71	770.11		251	0.1	251	0.1	100	1000	100	54	3.9	34	7.2	150	720
	Maximum					6.98	1252	16.5	5.14		27.4	771.8		329	0.1	329	0.1	410	1252	130	58	5.2	41	7.6	240	880
	Average					6.806666667	1147.33333	16.1666667	3.806666667		26.47333333	771.0366667		283.333	0.1	283.3333333	0.1	203.3333333	1136.3333	113.3333333	56	4.5	36.66666667	7.4	193.3333	803.333333
	StdDev					0.291604755	109.819549	0.4163332	1.16714752		0.856757453	0.856757453		40.6735	1.6997E-17	40.67349669	0	178.9785834	127.26482	15.27525232	2.82842712	0.6557439	3.785938897	0.2	45.0925	80.2080628
	Count					3	3	3	3		3	3		3	3	3	2	3	3	3	2	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
21/11/2012																												
7/05/2013	0.01	0.005	0.001	0.0026	0.0014	0.0034	0.00085	0.3	<0.0001	0.31	0.5	0.97	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	6	0.081	0.002
13/08/2013						0.069	0.19																					

T10.2 - Groundwater Results - MB 2

SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information											Analytical Information													
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB2	9.56	TH	6.55	6510	15.3	3.56		2.61	779.25	906738	200	0.1	200	0.1	540	6600	480	730	1.1	250	6.6	4500	6900
		17/01/2013	MB2	11.22	TH	6.87	6600	16.4	2.71		2.88	778.98	922841	199	0.1	199	0.1	570	6600	490	790	1.4	240	6.7	4100	7400
		1/05/2013	MB2	9:40	DS	6.27	6160	15.2	0.18		3.37	778.49	936991	197	0.1	197	0.1	590	6160	510	720	1.1	230	7.1	4000	7100
		16/08/2013	MB2	13:00	DS	6.57	6810	15.4	0.48		2.62	779.24	951936	207	0.1	207		600	6810	520		1.6	260	7	4100	7100
'<' removed from <LOR values																										
2012/13	Minimum					6.27	6160	15.2	0.18		2.61	778.49		197	0.1	197	0.1	540	6160	480	720	1.1	230	6.6	4000	6900
	Maximum					6.87	6810	16.4	3.56		3.37	779.25		207	0.1	207	0.1	600	6810	520	790	1.6	260	7.1	4500	7400
	Average					6.565	6520	15.575	1.7325		2.87	778.99		200.75	0.1	200.75	0.1	575	6542.5	500	746.666667	1.3	245	6.85	4175	7125
	StdDev					0.245153013	270.924344	0.55602758	1.660750332		0.355996255	0.355996255		4.34933	0	4.34932945	1.6997E-17	26.45751311	273.54159	18.25741858	37.859389	0.244949	12.90994449	0.238048	221.7356	206.155281
	Count					4	4	4	4		4	4		4	4	4	3	4	4	4	3	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						0.0066	0.00025			0.13																		
17/01/2013						0.0051	0.00008			0.065																		
1/05/2013	0.1	0.005	0.003	0.029	0.001	0.0041	0.00026	0.033	0.0001		0.2	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	5	0.022	0.006
16/08/2013						0.008	0.0003			0.12																		
Minimum						0.0041	0.00008			0.065																		
Maximum						0.008	0.0003			0.13																		
Average						0.00595	0.0002225			0.105																		
StdDev						0.0017098	9.743E-05			0.035																		
Count						4	4			3																		

T10.3 - Groundwater Results - MB 3

SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information											Analytical Information													
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB3	9.41	TH	6.1	2260	15.3	4.97		2.45	790.75	906739	248	0.1	248	0.1	500	2000	140	110	1.2	72	6.7	43	1200
		17/01/2013	MB3	11.34	TH	6.91	3041	16.8	3.82		2.35	790.85	922842	248	0.1	248	0.1	500	2000	140	100	1.5	70	6.8	34	1600
		1/05/2013	MB3	10:30	DS	6.29	2017	15.7	2.03		2.64	790.56	936990	251	0.1	251	0.1	510	2017	140	100	1.3	75	7.2	34	1100
		16/08/2013	MB3	13:40	DS	6.76	2005	15.5	4.11		2.18	791.02	951937	250	0.1	250		520	2005	130		1.6	75	7	35	1100
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2012/13	Minimum					6.1	2005	15.3	2.03		2.18	790.56		248	0.1	248	0.1	500	2000	130	100	1.2	70	6.7	34	1100
	Maximum					6.91	3041	16.8	4.97		2.64	791.02		251	0.1	251	0.1	520	2017	140	110	1.6	75	7.2	43	1600
	Average					6.515	2330.75	15.825	3.7325		2.405	790.795		249.25	0.1	249.25	0.1	507.5	2005.5	137.5	103.333333	1.4	73	6.925	36.5	1250
	StdDev					0.38249183	487.856793	0.67019898	1.235593649		0.192267175	0.192267175		1.5	0	1.5	1.6997E-17	9.574271078	8.0208063	5	5.77350269	0.1825742	2.449489743	0.221736	4.358899	238.047614
	Count					4	4	4	4		4	4		4	4	4	3	4	4	4	3	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						0.018	0.0001			0.64																		
17/01/2013						0.0017	0.00005			0.018																		
1/05/2013	0.01	0.005	0.002	0.00012	0.0002	0.0012	0.00007	0.0005	0.0001	0.023	0.1	0.48	0.01	0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.05	6	0.032	0.005
16/08/2013						0.002	0.0005			0.015																		
Minimum						0.0012	0.00005			0.015																		
Maximum						0.018	0.0005			0.64																		
Average						0.005725	0.00018			0.174																		
StdDev						0.00819	0.0002143			0.3106842																		
Count						4	4			4																		

T10.4 - Groundwater Results - MB 4

EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information											Analytical Information													
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MB4	12.51	TH	6.28	1874	18.8	3.58		11.17	775.33	915128	17.4	0.1	17	0.1	440	1700	7.7	89	1.8	170	5.4	210	1100
		7/05/2013	MB4	1:40pm	DS	5.98	1726	18.2	2.88		11.82	774.68	937887	133	0.1	133	0.1	410	1726	7.5	87	1.6	160	7.9	210	1100
		13/08/2013	MB4	11:50pm	DS	5.1	1650	15.4	2.36		11.65	774.85	951359	13.6	0.1	13		410	1650	7.2		1.7	170	5	210	1000
'<' removed from <LOR values																										
2012/13	Minimum					5.1	1650	15.4	2.36		11.17	774.68		13.6	0.1	13	0.1	410	1650	7.2	87	1.6	160	5	210	1000
	Maximum					6.28	1874	18.8	3.58		11.82	775.33		133	0.1	133	0.1	440	1726	7.7	89	1.8	170	7.9	210	1100
	Average					5.786666667	1750	17.4666667	2.94		11.54666667	774.9533333		54.6667	0.1	54.33333333	0.1	420	1692	7.466666667	88	1.7	166.6666667	6.1	210	1066.66667
	StdDev					0.6132971	113.912247	1.81475435	0.612209115		0.337095437	0.337095437		67.8653	1.6997E-17	68.15668224	0	17.32050808	38.626416	0.251661148	1.41421356	0.1	5.773502692	1.571623	0	57.7350269
	Count					3	3	3	3		3	3		3	3	3	2	3	3	3	2	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
21/11/2012																												
7/05/2013	0.01	0.12	0.002	0.0015	0.021	0.048	0.0042	0.021	0.0001	0.84	0.3	0.29	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	2	0.05	0.005
13/08/2013						0.13	0.012			0.74																		
Minimum						0.048	0.0042			0.74																		
Maximum						0.13	0.012			0.84																		
Average						0.089	0.0081			0.79																		
StdDev						0.0579828	0.0055154			0.0707107																		
Count						2	2			2																		

T10.5 - Groundwater Results - MB 5

SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information													Analytical Information											
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB5	11.26	TH	4.85	7830	15.3	2		5.65	828.33	906740	0.1	0.1	1	0.2	540	7900	190	850	4.5	380	3.9	5500	9100
		17/01/2013	MB5	10.31	TH	5.13	7970	15.8	1.9		5.71	828.27	922843	0.1	0.1	1	0.2	540	7900	150	910	4.3	350	4.2	5700	9400
		3/05/2013	MB5	12.35	DS	5.07	7940	15.4	1.75		6.3	827.68	937572	0.1	0.1	1	0.2	540	7940	140	90	5.9	360	4.2	5800	9500
		29/08/2013	MB5	14:50	DS	4.43	8020	15.6	5.31	220	5.95	828.03	953589	0.1	0.1	1	0.2	550	8020	170	930	6.5	430	4.2	5800	9400
'<' removed from <LOR values																										
2012/13	Minimum					4.43	7830	15.3	1.75		5.65	827.68		0.1	0.1	1	0.2	540	7900	140	90	4.3	350	3.9	5500	9100
	Maximum					5.13	8020	15.8	5.31		6.3	828.33		0.1	0.1	1	0.2	550	8020	190	930	6.5	430	4.2	5800	9500
	Average					4.87	7940	15.525	2.74		5.9025	828.0775		0.1	0.1	1	0.2	542.5	7940	162.5	695	5.3	380	4.125	5700	9350
	StdDev					0.317069919	80.4155872	0.22173558	1.716410984		0.295	0.295		0	0	0	0	5	56.568542	22.17355783	404.763305	1.0708252	35.59026084	0.15	141.4214	173.205081
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						0.015	0.0021			180																		
17/01/2013						0.012	0.0018			180																		
3/05/2013	0.01	20	0.027	0.15	1	0.019	0.0015	30	0.0001	210	5.8	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	6	0.021	0.008
29/08/2013						0.019	0.0011			240																		
Minimum						0.012	0.0011			180																		
Maximum						0.019	0.0021			240																		
Average						0.01625	0.001625			202.5																		
StdDev						0.0034034	0.0004272			28.722813																		
Count						4	4			4																		

T10.6 - Groundwater Results - MB 6

EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
	Statistics	Field Information											Analytical Information													
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MB6	10.38	TH	5.21	5020	16.2	3.68		7.23	788.98	915129	33.6	0.1	34	0.1	1400	5100	32	340	12	480	5.6	860	3600
		3/05/2013	MB6	13:15	DS	5.92	4870	16	2.87		7.39	788.82	937575	31	0.1	31	0.1	1400	4870	31	330	13	430	5.6	770	3500
		13/08/2013	MB6	14:15	DS	5.42	5100	15	2.48		6.88	789.33	951361	32.2	0.1	32		410	5100	33		13	470	6	210	3600
'<' removed from <LOR values																										
2012/13	Minimum					5.21	4870	15	2.48		6.88	788.82		31	0.1	31	0.1	410	4870	31	330	12	430	5.6	210	3500
	Maximum					5.92	5100	16.2	3.68		7.39	789.33		33.6	0.1	34	0.1	1400	5100	33	340	13	480	6	860	3600
	Average					5.516666667	4996.66667	15.7333333	3.01		7.166666667	789.0433333		32.2667	0.1	32.33333333	0.1	1070	5023.3333	32	335	12.666667	460	5.733333	613.3333	3566.66667
	StdDev					0.364737348	116.761866	0.64291005	0.612127438		0.260832002	0.260832002		1.30128	1.6997E-17	1.527525232	0	571.5767665	132.79056	1	7.07106781	0.5773503	26.45751311	0.23094	352.1837	57.7350269
	Count					3	3	3	3		3	3		3	3	3	2	3	3	3	2	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
21/11/2012																												
3/05/2013	0.01	0.13	0.006	0.019	0.0035	0.012	0.00039	0.94	0.0003	10	0.5	0.07	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	3	0.065	0.009
13/08/2013						0.012	0.0025			9.8																		
Minimum						0.012	0.00039			9.8																		
Maximum						0.012	0.0025			10																		
Average						0.012	0.001445			9.9																		
StdDev						0	0.001492			0.1414214																		
Count						2	2			2																		

T10.7 - Groundwater Results - MB 7

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB7	12.42	TH	6.43	9210	14	3.29		2.22	786.85	906741	665	0.1	665	0.1	3000	9200	340	590	7.5	510	6.8	290	6200
		17/01/2013	MB7	9.25	TH	6.54	8960	15.6	2.74		2.79	786.28	922844	649	0.1	649	0.1	2900	8800	320	600	9	560	6.9	210	7100
		3/05/2013	MB7	10:25am	DS	6.99	8240	15.4	2.8		3.56	785.51	937577	636	0.1	636	0.1	2500	8240	320	54	12	530	7.1	180	6200
		14/08/2013	MB7	14:05	DS	6.70	9090	15.4	2.17		2.54	786.53	951508	655	0.1	655		2900	9090	330		11	580	7.1	160	5100
2012/13	Minimum					6.43	8240.00	14.00	2.17		2.22	785.51		636.00	0.10	636.00	0.10	2500.00	8240.00	320.00	54.00	7.50	510.00	6.80	160.00	5100.00
	Maximum					6.99	9210.00	15.60	3.29		3.56	786.85		665.00	0.10	665.00	0.10	3000.00	9200.00	340.00	600.00	12.00	580.00	7.10	290.00	7100.00
	Average					6.67	8875.00	15.10	2.75		2.78	786.29		651.25	0.10	651.25	0.10	2825.00	8832.50	327.50	414.67	9.88	545.00	6.98	210.00	6150.00
	StdDev					0.205060967	601.040764	0	0.445477272		0.721248917	0.721248917		13.435	0	13.43502884	#DIV/0!	282.8427125	601.04076	7.071067812	#DIV/0!	0.7071068	35.35533906	0	14.14214	777.817459
	Count					4	4	4	4		4	4		4	4	4	3	4	4	4	3	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						0.068	0.00008			3.8																		
17/01/2013						0.13	0.00016			4																		
3/05/2013	0.01	0.037	0.017	0.0099	0.0096	0.028	0.00012	1.1	0.0001	1.3	0.3	0.06	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	13	0.23	0.037
14/08/2013						0.014	0.003			0.12																		
Minimum						0.01	0.00			0.12																		
Maximum						0.13	0.00			4.00																		
Average						0.06	0.00			2.31																		
StdDev						0.0098995	0.0020365			0.834386																		
Count						4	4			4																		

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T10.8 - Groundwater Results - MB 8

	Statistics	Field Information																								
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		17/01/2013	MB8	11.07	TH	6.7	3540	16.9	4.29		4.65	747.92	922845	592	0.1	592	0.1	810	3500	97	140	1.7	450	7.2	120	2100
		3/05/2013	MB8	9:15am	DS	6.76	3540	15.1	1.42		5	747.57	937582	583	<0.1	583	<0.1	820	3540	110	150	2.4	430	7.3	110	2200
		16/08/2013	MB8	14:00	DS	6.99	3600	15.4	0.92		2.97	749.6	951938	588	<0.1	588		870	3600	95		2	440	7.5	110	2000
2012/13	Minimum					6.7	3540	15.1	0.92		2.97	747.57		583	0.1	583	0.1	810	3500	95	140	1.7	430	7.2	110	2000
	Maximum					6.99	3600	16.9	4.29		5	749.6		592	0.1	592	0.1	870	3600	110	150	2.4	450	7.5	120	2200
	Average					6.816666667	3560	15.8	2.21		4.206666667	748.3633333		587.667	0.1	587.6666667	0.1	833.3333333	3546.6667	100.6666667	145	2.0333333	440	7.333333	113.3333	2100
	StdDev					0.1530795	34.6410162	0.96436508	1.818598361		1.085188156	1.085188156		4.50925	#DIV/0!	4.509249753	#DIV/0!	32.14550254	50.33223	8.144527815	7.07106781	0.3511885	10	0.152753	5.773503	100
	Count					3	3	3	3		3	3		3	1	3	1	3	3	3	2	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
17/01/2013						0.0054	0.00005			0.48																		
3/05/2013	0.01	0.015	0.005	0.00062	0.0005	0.0046	0.00005	0.0076	0.0001	0.17	0.8	5	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	7	0.14	0.019
16/08/2013						0.005	0.007			0.035																		
Minimum						0.0046	0.00005			0.035																		
Maximum						0.0054	0.007			0.48																		
Average						0.005	0.0023667			0.2283333																		
StdDev						0.0004	0.0040126			0.228163																		
Count						3	3			3																		

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T10.9 - Groundwater Results - MB 10

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved	Oxidation-	Depth to Water	RL Water Level	Laboratory Sample	Bicarbon	Carbonate	Alkalinity (as	Nitrogen	Chloride	Conductivit	Dissolved	Dissolved	Dissolved	Dissolved	pH	Sulphate	Total
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB10	10.13	TH	6.77	7330	14.4	3.32		2.77	781.03	906743	227	0.1	227	0.1	850	7300	500	670	0.8	490	6.9	3700	7300
		17/01/2013	MB10	11.53	TH	6.95	7460	16.5	2.84		2.63	781.17	922846	228	0.1	228	0.1	940	7400	500	730	1	470	6.9	3900	7600
		1/05/2013	MB10	12:10pm	DS	6.7	7440	15.4	0.46		2.8	781	936992	226	<0.1	226	0.1	510	7440	490	670	0.9	430	7.3	34	7300
		16/08/2013	MB10	14:40pm	DS	6.81	7610	15	1.92		2.47	781.33	951939	231	<0.1	231		1000	7610	510		1.1	480	7.2	3900	7300
2012/13	Minimum					6.7	7330	14.4	0.46		2.47	781		226	0.1	226	0.1	510	7300	490	670	0.8	430	6.9	34	7300
	Maximum					6.95	7610	16.5	3.32		2.8	781.33		231	0.1	231	0.1	1000	7610	510	730	1.1	490	7.3	3900	7600
	Average					6.8075	7460	15.325	2.135		2.6675	781.1325		228	0.1	228	0.1	825	7437.5	500	690	0.95	467.5	7.075	2883.5	7375
	StdDev					0.105316982	115.181017	0.8845903	1.258716277		0.151079449	0.151079449		2.16025	0	2.160246899	1.6997E-17	218.8606863	129.19623	8.164965809	34.6410162	0.1290994	26.2995564	0.206155	1902.005	150
	Count					4	4	4	4		4	4		4	2	4	3	4	4	4	3	4	4	4	4	4

Date	Chromium	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Fluoride	Nitrate	Nitrite	Organo-	Organo-phosphate	Polycyclic Aromatic	TPH C6-	TPH C10-	TPH C15-	TPH C29-	Benzene	Toluene	Ethyl	Xylene	Total	Total Organic	Total	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						0.0088	0.00014			0.046																		
17/01/2013						0.0091	0.00008			0.013																		
1/05/2013	0.0100	<0.005	0.003	0.00017	0.0013	0.0074	0.00028	0.082	0.0001	0.021	0.1	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.05	4	0.0078	0.01
16/08/2013						0.008	0.0002			0.006																		
Minimum						0.0074	0.00008			0.006																		
Maximum						0.0091	0.00028			0.046																		
Average						0.008325	0.000175			0.0215																		
StdDev						0.0007719	8.544E-05			0.0174452																		
Count						4	4			4																		

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T10.10 - Groundwater Results - MB 11

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB11	8.56	TH	4.59	30900	12.5	4.87		1.23	777.74	906744	0.1	0.1	1	0.1	1700	35000	470	7300	4.6	890	3.9	44000	73000
		17/01/2013	MB11	8.55	TH	4.72	33300	16.1	5.04		1.65	777.32	922847	0.1	0.1	1	0.2	2100	38000	520	9000	0.1	2100	3.7	55000	77000
		2/05/2013	MB11	2:25pm	DS	4.31	38300	16.2	3.35		1.95	781.85	937411	0.1	0.1	1	0.4	2300	38300	430	6900	1.7	1700	3.6	63000	87000
		29/08/2013	MB11	12:30	DS	4.3	26300	13.8	5.6	318	1.2	782.6	953584	0.1	0.1	1	0.1	1400	26300	400	4500	0.1	1200	4	30000	57000
2012/13	Minimum					4.3	26300	12.5	3.35		1.2	777.32		0.1	0.1	1	0.1	1400	26300	400	4500	0.1	890	3.6	30000	57000
	Maximum					4.72	38300	16.2	5.6		1.95	782.6		0.1	0.1	1	0.4	2300	38300	520	9000	4.6	2100	4	63000	87000
	Average					4.48	32200	14.65	4.715		1.5075	779.8775		0.1	0.1	1	0.2	1875	34400	455	6925	1.625	1472.5	3.8	48000	73500
	StdDev					0.208965707	4997.33262	1.81199706	0.961959805		0.359478789	2.733280995		0	0	0	0.14142136	403.1128874	5601.7854	51.96152423	1855.39753	2.1219095	535.1245961	0.182574	14306.18	12476.6448
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						170	0.015			4700																		
17/01/2013						210	0.022			6600																		
2/05/2013	0.1	710	0.11	36	19	210	0.026	730	0.0003	5800	170	0.05	0.01	0.002	0.002	0.05	20	120	520	260	1	<2	2	2	0.87	21	0.033	0.018
29/08/2013						53	0.013			3500																		
Minimum						53	0.013			3500																		
Maximum						210	0.026			6600																		
Average						160.75	0.019			5150																		
StdDev						74.266973	0.0060553			1347.8378																		
Count						4	4			4																		

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T10.11 - Groundwater Results - MB 12

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB12	9.08	TH	4.12	39800	13.3	7.89		1.95	778	906745	0.1	0.1	1	0.4	1900	39000	520	8300	9.5	1200	3.6	56000	92000
		17/01/2013	MB12	9.05	TH	4.25	40000	15.1	3.17		2.2	777.75	922848	0.1	0.1	1	0.5	2300	40000	550	8900	0.1	2400	3.6	61000	95000
		2/05/2013	MB12	2:08pm	DS	3.5	40500	14.8	1.9		1.64	778.31	937412	0.1	0.1	1	0.3	2300	40500	420	6500	4.1	1800	3.5	68000	92000
		29/08/2013	MB12	12:45pm	DS	3.74	39500	14.8	3.02	374	1.84	778.11	953585	0.1	0.1	1	0.6	1900	39500	400	6600	12	1800	3.4	58000	92000
2011/12	Minimum					3.5	39500	13.3	1.9		1.64	777.75		0.1	0.1	1	0.3	1900	39000	400	6500	0.1	1200	3.4	56000	92000
	Maximum					4.25	40500	15.1	7.89		2.2	778.31		0.1	0.1	1	0.6	2300	40500	550	8900	12	2400	3.6	68000	95000
	Average					3.9025	39950	14.5	3.995		1.9075	778.0425		0.1	0.1	1	0.45	2100	39750	472.5	7575	6.425	1800	3.525	60750	92750
	StdDev					0.344710023	420.31734	0.81240384	2.657774758		0.233434502	0.233434502		0	0	0	0.12909944	230.9401077	645.49722	73.65459931	1209.33866	5.3524916	489.8979486	0.095743	5251.984	1500
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
24/09/2012						290	0.47			5900																		
17/01/2013						300	1.2			7400																		
2/05/2013	0.01	1100	0.14	41	25	280	1.1	740	0.0001	6200	140	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	1.28	22	0.031	0.018
29/08/2013						110	1			6300																		
Minimum						110	0.47			5900																		
Maximum						300	1.2			7400																		
Average						245	0.9425			6450																		
StdDev						90.369611	0.32541			655.74385																		
Count						4	4			4																		

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T10.12 - Groundwater Results - MB 13

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		17/01/2013	MB13	8.33	TH	7.01	3740	15.8	3.03		2.63	746.03	922849	616	0.1	616	0.1	950	3700	150	190	2.6	300	7.3	180	2500
		2/05/2013	MB13	10:30am	DS	6.89	3420	15.3	0.06		3.11	745.55	937413	598	0.1	598	0.1	740	3420	150	180	3.1	300	7.5	99	2100
		29/08/2013	MB13	10:55am	DS	7.14	3360	16.4	2.66	249	1.98	746.68	953581	615	0.1	615	0.1	840	3360	140	180	2.9	290	7.4	72	1900
2012/13	Minimum					6.89	3360	15.3	0.06		1.98	745.55		598	0.1	598	0.1	740	3360	140	180	2.6	290	7.3	72	1900
	Maximum					7.14	3740	16.4	3.03		3.11	746.68		616	0.1	616	0.1	950	3700	150	190	3.1	300	7.5	180	2500
	Average					7.013333333	3506.66667	15.8333333	1.916666667		2.573333333	746.0866667		609.667	0.1	609.6666667	0.1	843.3333333	3493.3333	146.6666667	183.333333	2.8666667	296.6666667	7.4	117	2166.66667
	StdDev					0.125033329	204.287379	0.55075705	1.618528138		0.567127264	0.567127264		10.116	1.6997E-17	10.11599394	1.6997E-17	105.039675	181.47543	5.773502692	5.77350269	0.2516611	5.773502692	0.1	56.20498	305.505046
	Count					3	3	3	3		3	3		3	3	3	3	3	3	3	3	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
17/01/2013						0.062	0.00049			0.3																		
2/05/2013	0.01	0.087	0.006	0.0075	0.0036	0.02	0.00076	0.047	0.0001	0.47	0.5	0.54	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	9	0.025	0.02
29/08/2013						0.0026	0.00009			0.015																		
Minimum						0.0026	0.00009																					
Maximum						0.062	0.00076																					
Average						0.0282	0.0004467																					
StdDev						0.0305372	0.0003371																					
Count						3	3																					

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T10.13 - Groundwater Results - MB 14

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB14	10.32	TH	7.17	2189	14.6	4.37		8.58	783.79	906747	317	0.1	317	0.1	75	2200	140	170	0.9	140	7.3	860	1800
		17/01/2013	MB14	12.06	TH	7.25	2096	15.6	3.84		8.72	783.65	922850	330	0.1	330	0.1	67	2000	120	140	1.2	130	7.5	730	1700
		2/05/2013	MB14	1:30pm	DS	6.76	2490	14.7	2.28		6.27	786.1	937414	316	0.1	316	0.1	97	2490	0.16	0.19	1.8	140	7.5	1100	2200
		5/09/2013	MB14	11:40pm	DS	7.21	2420	16	2.51		8.66	783.71	954223	300	0.1	300	0.1	87	2420	160	190	1.6	150	7.6	1100	2200
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2012/13	Minimum					6.76	2096	14.6	2.28		6.27	783.65		300	0.1	300	0.1	67	2000	0.16	0.19	0.9	130	7.3	730	1700
	Maximum					7.25	2490	16	4.37		8.72	786.1		330	0.1	330	0.1	97	2490	160	190	1.8	150	7.6	1100	2200
	Average					7.0975	2298.75	15.225	3.25		8.0575	784.3125		315.75	0.1	315.75	0.1	81.5	2277.5	105.04	125.0475	1.375	140	7.475	947.5	1975
	StdDev					0.227358014	186.575052	0.68495742	1.015053365		1.193045822	1.193045822		12.2848	0	12.28481447	0	13.20353488	222.46723	71.80162301	85.7370536	0.4031129	8.164965809	0.125831	183.9157	262.995564
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	
24/09/2012						0.0084	0.00005			0.089																			
17/01/2013						0.018	0.00009			0.08																			
2/05/2013	0.0100	0.049	0.002	0.0028	0.0016	0.016	0.00016	0.034	0.0001	0.57	0.0007	6.4	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	5	0.036	0.003	
5/09/2013						0.0032	0.00007			0.012																			
Minimum							0.00005			0.012																			
Maximum							0.00016			0.57																			
Average							0.0000925			0.18775																			
StdDev							4.787E-05			0.2571412																			
Count							4			4																			

T10.14 - Groundwater Results - MB 15

	Statistics	Field Information													Analytical Information											
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB15	11.49	TH	6.51	8460	13.3	3.8		0	764.86	906748	514	0.1	514	0.1	440	8400	470	1200	12	360	7.1	5900	9900
		17/01/2013	MB15	10.08	TH	6.39	8470	16.5	3.46		0	764.86	922851	496	0.1	496	0.1	430	8300	460	1300	15	320	6.9	6000	9800
		3/05/2013	MB15	9:50	DS	6.93	8280	15.9	1.75		0.3	764.56	937585	488	0.1	488	0.1	450	8280	480	120	19	330	6.9	5700	9400
		29/08/2013	MB15	2:05pm	DS	6.67	7710	16	5.1	213	5.9	758.96	953588	481	0.1	481	0.1	450	7710	450	1000	16	300	7.2	5200	8800
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2012/13	Minimum					6.39	7710	13.3	1.75		0	758.96		481	0.1	481	0.1	430	7710	450	120	12	300	6.9	5200	8800
	Maximum					6.93	8470	16.5	5.1		5.9	764.86		514	0.1	514	0.1	450	8400	480	1300	19	360	7.2	6000	9900
	Average					6.625	8230	15.425	3.5275		1.55	763.31		494.75	0.1	494.75	0.1	442.5	8172.5	465	905	15.5	327.5	7.025	5700	9475
	StdDev					0.233452351	357.491259	1.44077525	1.379743334		2.903446228	2.903446228		14.2215	0	14.22146265	0	9.574271078	312.76988	12.90994449	537.990087	2.8867513	25	0.15	355.9026	499.165971
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	
24/09/2012						0.0081	0.00005			0.19																			
17/01/2013						0.027	0.00005			1.3																			
3/05/2013	0.01	0.02	0.005	0.0054	0.015	0.021	0.00005	4.7	0.0001	1.5	0.4	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	6	0.032	0.012	
29/08/2013						0.054	0.0031			2.6																			
Minimum						0.0081	0.00005			0.19																			
Maximum						0.054	0.0031			2.6																			
Average						0.027525	0.0008125			1.3975																			
StdDev						0.0193314	0.001525			0.9872647																			
Count						4	4			4																			

T10.15 - Groundwater Results - MB 16

	Statistics	Field Information											Analytical Information													
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		17/01/2013	MB16	9.48	TH	3.95	33300	16.6	3.05		2.44	768.95	922852	0.1	0.1	1	8.3	270	32000	540	7300	0.1	290	3.3	56000	85000
		2/05/2013	MB16	12:20pm	DS	3.74	33800	17.1	0.57		2.77	768.62	937415	0.1	0.1	1	6.2	270	33800	430	5900	7.2	210	3.1	70000	87000
		29/08/2013	MB16	13:40pm	DS	3.38	33400	14.9	2.47	359	2.34	769.05	953587	0.1	0.1	1	8.4	270	33400	440	6300	5.4	1200	3.1	56000	87000
'<' removed from <LOR values																										
2012/13	Minimum					3.38	33300	14.9	0.57		2.34	768.62		0.1	0.1	1	6.2	270	32000	430	5900	0.1	210	3.1	56000	85000
	Maximum					3.95	33800	17.1	3.05		2.77	769.05		0.1	0.1	1	8.4	270	33800	540	7300	7.2	1200	3.3	70000	87000
	Average					3.69	33500	16.2	2.03		2.516666667	768.8733333		0.1	0.1	1	7.63333333	270	33066.667	470	6500	4.2333333	566.6666667	3.166667	60666.67	86333.3333
	StdDev					0.288270706	264.575131	1.15325626	1.297227813		0.225018518	0.225018518		1.7E-17	1.6997E-17	0	1.24230968	0	945.16313	60.8276253	721.110255	3.69098	549.9393906	0.11547	8082.904	1154.70054
	Count					3	3	3	3		3	3		3	3	3	3	3	3	3	3	3	3	3	3	3

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	
17/01/2013						200	0.45			6700																			
2/05/2013	0.01	2200	0.14	26	23	210	0.46	540	0.0001	6200	0.22	0.56	0.01	0.002	0.002	0.5	20	50	100	50	1	5	2	2	2.32	35	0.042	0.084	
29/08/2013						80	0.41	6300		6700																			
Minimum						80	0.41			6200																			
Maximum						210	0.46			6700																			
Average						163.33333	0.44			6533.3333																			
StdDev						72.341781	0.0264575			288.67513																			
Count						3	3			3																			

T10.16 - Groundwater Results - MB 17

	Statistics	Field Information											Analytical Information													
SML20		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
EPL 11436				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		24/09/2012	MB17	12.08	TH	6.56	10950	15.6	3.3		3.34	767.73	906750	515	0.1	515	0.1	530	11200	420	1800	16	590	6.4	8100	14000
		17/10/2013	MB17	9.36	TH	6.67	11520	16.2	3.48		3.39	767.68	922852	513	0.1	513	0.1	520	11200	430	1800	19	540	6.8	9000	15000
		2/05/2013	MB17	12:00pm	DS	6.65	11500	16.3	0.58		2.93	768.14	937416	517	0.1	517	0.1	530	11500	450	1800	27	580	6.8	10600	15000
		29/08/2013	MB17	13:10pm	DS	6.33	11920	16.5	2.46	199	2.83	768.24	953586	473	0.1	473	0.1	530	11920	420	1900	19	550	6.9	9400	15000
'<' removed from <LOR values																										
2012/13	Minimum					6.33	10950	15.6	0.58		2.83	767.68		473	0.1	473	0.1	520	11200	420	1800	16	540	6.4	8100	14000
	Maximum					6.67	11920	16.5	3.48		3.39	768.24		517	0.1	517	0.1	530	11920	450	1900	27	590	6.9	10600	15000
	Average					6.5525	11472.5	16.15	2.455		3.1225	767.9475		504.5	0.1	504.5	0.1	527.5	11455	430	1825	20.25	565	6.725	9275	14750
	StdDev					0.155857841	398.444894	0.38729833	1.326687605		0.283710533	0.283710533		21.0634	0	21.06339637	0	5	340.7345	14.14213562	50	4.7169906	23.80476143	0.221736	1037.224	500
	Count					4	4	4	4		4	4		4	4	4	4	4	4	4	4	4	4	4	4	4

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	
24/09/2012						0.04	0.0024			6.4																			
17/10/2013						0.05	0.00082			5.4																			
2/05/2013	0.01	0.16	0.007	0.0084	0.042	0.034	0.004	15	0.0001	6.3	0.1	0.05	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	10	0.024	0.014	
29/08/2013						0.074	0.0038			6.9																			
Minimum						0.034	0.00082			5.4																			
Maximum						0.074	0.004			6.9																			
Average						0.0495	0.002755			6.25																			
StdDev						0.0176163	0.0014734			0.6244998																			
Count						4	4			4																			

T10.17 - Groundwater Results - ED3B

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	ED3B	11.24	TH	6.56	7510	16	5.23		2.42	784.38	915130	529	0.1	529	0.1	2200	7700	67	340	0.6	1200	6.9	920	5100
		14/08/2013	ED3B	12:35pm	DS	6.68	7920	12.5	4.48		2.31	784.49	951507	507	0.1	507		2100	7920	83		1	1000	7.3	960	5100
'<' removed from <LOR values																										
2012/13	Minimum					6.56	7510	12.5	4.48		2.31	784.38		507	0.1	507	0.1	2100	7700	67	340	0.6	1000	6.9	920	5100
	Maximum					6.68	7920	16	5.23		2.42	784.49		529	0.1	529	0.1	2200	7920	83	340	1	1200	7.3	960	5100
	Average					6.62	7715	14.25	4.855		2.365	784.435		518	0.1	518	0.1	2150	7810	75	340	0.8	1100	7.1	940	5100
	StdDev					0.084852814	289.91378	2.47487373	0.530330086		0.077781746	0.077781746		15.5563	0	15.55634919	#DIV/0!	70.71067812	155.56349	11.3137085	#DIV/0!	0.2828427	141.4213562	0.282843	28.28427	0
	Count					2	2	2	2		2	2		2	2	2	1	2	2	2	1	2	2	2	2	2

Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	
21/11/2012																													SWL
14/08/2013						0.022	0.0043			0.1																			

T10.18 - Groundwater Results - WM1

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	uS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	WM1	9.31	TH	7.17	2170		3.19	16	45.69	735.58	915131	220	0.1	220	0.1	210	2100	230	110	4	72	7.3	720	1700
		6/05/2013	WM1	2:55pm	DS	6.92	2103		7.35	16.6	100	681.27	937741	227	0.1	227	0.1	210	2103	230	120	4.7	73	7.5	740	1400
		3/09/2013	WM1	2:50pm	DS	7.03	2097	279	4.51	17	44.56	736.71	953930	55.7	0.1	56	0.1	200	2097	230	110	4.4	70	7.2	760	1700
2012/13	Minimum					6.92	2097		3.19	16	44.56	681.27		55.7	0.1	56	0.1	200	2097	230	110	4	70	7.2	720	1400
	Maximum					7.17	2170		7.35	17	100	736.71		227	0.1	227	0.1	210	2103	230	120	4.7	73	7.5	760	1700
	Average					7.04	2123.33333		5.016666667	16.53333333	63.41666667	717.8533333		167.567	0.1	167.6666667	0.1	206.6666667	2100	230	113.333333	4.3666667	71.66666667	7.333333	740	1600
	StdDev					0.125299641	40.525712		2.125778289	0.503322296	31.68713356	31.68713356		96.9426	1.6997E-17	96.76948555	1.6997E-17	5.773502692	3	0	5.77350269	0.3511885	1.527525232	0.152753	20	173.205081
	Count					3	3		3	3	3	3		3	3	3	3	3	3	3	3	3	3	3	3	3

		Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		6/05/2013	0.01	0.011	0.002	0.018	0.0063	0.018	0.0024	0.018	0.0001	5.2	0.6	0.17	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.002	7	0.049	0.002
		3/09/2013						0.021	0.016			0.18																		
2012/13	Minimum							0.018	0.0024			0.18																		
	Maximum							0.021	0.016			5.2																		
	Average							0.0195	0.0092			2.69																		
	StdDev							0.0021213	0.0096167			3.549676																		
	Count							2	2	1	1	2																		

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T10.19 - Groundwater Results - WM3

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	µS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	WM3	10.19	TH	4.4	3530		2.74	18.1	8.9	698.72	915132	0.1	0.1	1	1.5	64	3500	210	220	11	40	4	2900	4300
		6/05/2013	WM3	12:50pm	DS	4.8	3200		0.53	19	2.59	705.03	937739	0.1	0.1	1	1.6	63	3200	210	210	13	44	4.3	2300	3700
2012/13	Minimum					4.4	3200		0.53	18.1	2.59	698.72		0.1	0.1	1	1.5	63	3200	210	210	11	40	4	2300	3700
	Maximum					4.8	3530		2.74	19	8.9	705.03		0.1	0.1	1	1.6	64	3500	210	220	13	44	4.3	2900	4300
	Average					4.6	3365		1.635	18.55	5.745	701.875		0.1	0.1	1	1.55	63.5	3350	210	215	12	42	4.15	2600	4000
	StdDev					0.282842712	233.345238		1.562705986	0.636396103	4.461843789	4.461843789		0	0	0	0.07071068	0.707106781	212.13203	0	7.07106781	1.4142136	2.828427125	0.212132	424.2641	424.264069
	Count					2	2		2	2	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2

		Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		6/05/2013	0.01	48	0.018	0.0079	0.45	0.035	0.014	12	0.0001	200	0.0064	0.3	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	4	0.029	0.011

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T10.20 - Groundwater Results - WM4

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	uS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		23/08/2012	WM4	8.46	TH	0	0		0	0	101.63	632.29	902539	45.6	0.1	46	0.1	48	1900	180	28	2.1	230	7.5	900	1500
		3/09/2013	WM4	3:40pm	DS	7	1886		3.37	17.2	100.35	633.57	953931	215	0.1	215	0.1	46	1886	180	28	1.9	220	7.4	920	1400
2012/13	Minimum					0.00	0.00		0.00	0.00	100.35	632.29		45.60	0.10	46.00	0.10	46.00	1886.00	180.00	28.00	1.90	220.00	7.40	900.00	1400.00
	Maximum					7.00	1886.00		3.37	17.20	101.63	633.57		215.00	0.10	215.00	0.10	48.00	1900.00	180.00	28.00	2.10	230.00	7.50	920.00	1500.00
	Average					0.00	0.00		0.00	0.00	101.63	632.29		45.60	0.10	46.00	0.10	48.00	1900.00	180.00	28.00	2.10	230.00	7.50	900.00	1500.00
	StdDev					4.95	1333.60		2.38	12.16	0.91	0.91		119.78	0.00	119.50	0.00	1.41	9.90	0.00	0.00	0.14	7.07	0.07	14.14	70.71
	Count					2.00	2.00		2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

		Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L
		23/08/2012																												
		3/09/2013						0.0038	0.00061			0.18																		

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T10.21 - Groundwater Results - WM5

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	µS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		14/08/2013	WM5	12:10pm	DS	7.31	6460		4.27	14.3	4.57	782.16	951506	756	0.1	756		1800	6460	90		2.7	870	7.6	150	3700

		Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L
		14/08/2013						0.017	0.0074			0.033																		

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T10.22 - Groundwater Results - WM6

EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	uS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	WM6	13.11	TH	6.39	13470		6.53	16.9	3.66	786.68	915134	47	0.1	47	0.1	4900	14000	100	440	2.5	2200	6	380	9200
		7/05/2013	WM6	12:00:00 PM	DS	7.04	12960		7.35	16.8	4.3	786.04	937888	133	0.1	133	0.1	4300	12960	90	380	3.1	2000	7.9	330	7900
		14/08/2013	WM6	11:35am	DS	5.88	13420		8.05	15.6	3.91	786.43	951505	47.3	0.1	47		4700	13420	110	N/A	2.5	2300	6.1	340	7500
2012/13	Minimum					5.88	12960		6.53	15.6	3.66	786.04		47	0.1	47	0.1	4300	12960	90	380	2.5	2000	6	330	7500
	Maximum					7.04	13470		8.05	16.9	4.3	786.68		133	0.1	133	0.1	4900	14000	110	440	3.1	2300	7.9	380	9200
	Average					6.436666667	13283.3333		7.31	16.43333333	3.956666667	786.3833333		75.7667	0.1	75.66666667	0.1	4633.333333	13460	100	410	2.7	2166.666667	6.666667	350	8200
	StdDev					0.581406341	281.128678		0.760789064	0.723417814	0.322541987	0.322541987		49.5657	1.6997E-17	49.65212315	0	305.5050463	521.15257	10	42.4264069	0.3464102	152.7525232	1.069268	26.45751	888.819442
	Count					3	3		3	3	3	3		3	3	3	2	3	3	3	2	3	3	3	3	3

		Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		7/05/2013	0.01	0.025	0.016	0.002	0.036	0.012	0.0064	0.3	0.0003	0.35	0.4	29	0.14	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	5	0.13	0.007
		14/08/2013						0.034	0.017			0.3																		
2012/13	Minimum							0.012	0.0064			0.3																		
	Maximum							0.034	0.017			0.35																		
	Average							0.023	0.0117			0.325																		
	StdDev							0.0155563	0.0074953			0.0353553																		
	Count							2	2			2																		

'<' removed from <LOR values

T10.23 - Groundwater Results - MW8S

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	µS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MW8S	13.44	TH	6.83	12400		6.97	6.83	5.46	785.19	915135	518	0.1	518	0.1	3700	13000	300	960	4.5	1200	6.9	2600	9900
		14/08/2013	MW8S	10:45 AM	DS	6.55	12860		5.73	15.4	3.8	786.85	951503	470	<0.1	470		3700	12860	290	N/A	5.4	1100	6.9	2400	9100
'<' removed from <LOR values																										
2012/13	Minimum					6.55	12400		5.73	6.83	3.8	785.185		470	0.1	470	0.1	3700	12860	290	960	4.5	1100	6.9	2400	9100
	Maximum					6.83	12860		6.97	15.4	5.46	786.845		518	0.1	518	0.1	3700	13000	300	960	5.4	1200	6.9	2600	9900
	Average					6.69	12630		6.35	11.115	4.63	786.015		494	0.1	494	0.1	3700	12930	295	960	4.95	1150	6.9	2500	9500
	StdDev					0.197989899	325.269119		0.876812409	6.059905115	1.173797257	1.173797257		33.9411	#DIV/0!	33.9411255	#DIV/0!	0	98.994949	7.071067812	#DIV/0!	0.6363961	70.71067812	0	141.4214	565.685425
	Count					2	2		2	2	2	2		2	1	2	1	2	2	2	1	2	2	2	2	2

EPL 11436	Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		14/08/2013						0.086	0.021			5.4																		

T10.24 - Groundwater Results - MW8D

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	uS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MW8D	13.30	TH	6.5	11070		7.65	16.8	5.2	785.35	915136	193	0.1	193	0.1	3000	11100	320	950	4.6	960	6.5	3200	9800
		22/05/2013	MW8D	1:10pm	DS	6.44	10730		5.5	12.8	6.12	784.43	940237	117	0.1	117	0.1	2100	10730	370	1100	7	760	6.6	4300	9400
		14/08/2013	MW8D	10:55am	DS	6.12	10790		6.4	16.4	5.33	785.22	951504	131	0.1	131		2400	10790	330		5.3	820	6.4	3700	8700
'<' removed from <LOR values																										
2012/13	Minimum					6.12	10730		5.5	12.8	5.2	784.428		117	0.1	117	0.1	2100	10730	320	950	4.6	760	6.4	3200	8700
	Maximum					6.5	11070		7.65	16.8	6.12	785.348		193	0.1	193	0.1	3000	11100	370	1100	7	960	6.6	4300	9800
	Average					6.353333333	10863.3333		6.516666667	15.33333333	5.55	784.998		147	0.1	147	0.1	2500	10873.333	340	1025	5.6333333	846.6666667	6.5	3733.333	9300
	StdDev					0.204287379	181.475435		1.079737622	2.203028219	0.497895571	0.497895571		40.4475	1.6997E-17	40.44749683	0	458.2575695	198.57828	26.45751311	106.066017	1.2342339	102.6320288	0.1	550.7571	556.776436
	Count					3	3		3	3	3	3		3	3	3	2	3	3	3	2	3	3	3	3	3

EPL 11436	Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		22/05/2013	0.01	0.052	0.009	0.29	0.043	0.008	0.0005	2.7	0.0001	19	0.5	0.01	0.16	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	5	0.038	0.002
		14/08/2013						0.074	0.0068			21																		
2012/13	Minimum							0.008	0.0005																					
	Maximum							0.074	0.0068																					
	Average							0.041	0.00365																					
	StdDev							0.046669	0.0044548																					
	Count							2	2																					

T10.25 - Groundwater Results - MW9S

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	µS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MW9S	14.01	TH	6.89	10350		5.26	15.9	2.51	787.03	915137	227	0.1	227	0.1	2100	10400	300	770	2.3	1300	6.8	4100	9200
		22/05/2013	MW9S	11:25am	DS	7.27	11020		5.48	13.5	3.3	786.24	940238	230	<0.1	230	0.1	2000	11020	320	820	3.6	1200	7.1	4200	9600
		5/09/2013	MW9S	11:10	DS	6.6	10730		4.98	16	2.94	786.60	954222	223	<0.1	223	0.1	1900	10730	330	830	3	1200	7	4300	9500
'<' removed from <LOR values																										
2012/13	Minimum					6.6	10350		4.98	13.5	2.51	786.244		223	0.1	223	0.1	1900	10400	300	770	2.3	1200	6.8	4100	9200
	Maximum					7.27	11020		5.48	16	3.3	787.034		230	0.1	230	0.1	2100	11020	330	830	3.6	1300	7.1	4300	9600
	Average					6.92	10700		5.24	15.13333333	2.916666667	786.6273333		226.667	0.1	226.6666667	0.1	2000	10716.667	316.6666667	806.666667	2.9666667	1233.333333	6.966667	4200	9433.33333
	StdDev					0.336005952	336.005952		0.250599282	1.415391583	0.39551654	0.39551654		3.51188	#DIV/0!	3.511884584	1.6997E-17	100	310.21498	15.27525232	32.1455025	0.6506407	57.73502692	0.152753	100	208.1666
	Count					3	3		3	3	3	3		3	1	3	3	3	3	3	3	3	3	3	3	3

EPL 11436	Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		22/05/2013	0.01	0.061	0.009	0.002	0.012	0.005	0.00041	0.021	0.0006	0.48	1	0.9	0.01	0.002	0.002	0.5	20	50	100	50	1	2	2	2	0.05	7	0.037	0.003
		5/09/2013						0.012	0.00011			0.27																		
2012/13	Minimum							0.005	0.00011			0.27																		
	Maximum							0.012	0.00041			0.48																		
	Average							0.0085	0.00026			0.375																		
	StdDev							0.0049497	0.0002121			0.1484924																		
	Count							2	2			2																		

T10.26 - Groundwater Results - MW10S

	Statistics	Field Information											Analytical Information													
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Temperature	Depth to Water	RL Water Level	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
				AM/PM	Initials	pH	uS/cm	mV	mg/L	°C	m	m RL		mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
		21/11/2012	MW10S	Dry	14.21	TH																				
		22/05/2013	MW10S	Dry	12:30pm	DS																				
		14/08/2013	MW10S	Dry	11:15pm	DS																				
'<' removed from <LOR values																										

EPL 11436	Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
		21/11/2012																												
		22/05/2013																												
		14/08/2013																												

T-11.1 - Piezometer Water Level Results - P44A & P44B

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P44A	14.49	716.56	TH
		9/01/2013	P44A	14.85	716.20	HG
		17/04/2013	P44A	15.25	715.80	HG
		2/08/2013	P44A	14.95	716.10	HG
2012/13	Minimum			14.49	715.80	
	Maximum			15.25	716.56	
	Average			14.89	716.17	
	StdDev			0.313422	0.313422	
	Count			4	4	

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P44B	18.61	712.44	TH
		9/01/2013	P44B	18.35	712.70	HG
		17/04/2013	P44B	19.05	712.00	HG
		2/08/2013	P44B	18.45	712.60	HG
2012/13	Minimum			18.35	712.00	
	Maximum			19.05	712.70	
	Average			18.62	712.44	
	StdDev			0.309139	0.309139	
	Count			4	4	

T-11.2 - Piezometer Water Level Results - P45A & P45B

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P45A	14.31	716.85	TH
		9/01/2013	P45A	14.10	717.06	TH
		17/04/2013	P45A	15.50	715.66	HG
		2/08/2013	P45A	14.80	716.36	HG
2012/13	Minimum			14.10	715.66	
	Maximum			15.50	717.06	
	Average			14.68	716.48	
	StdDev			0.621845	0.621845	
	Count			4	4	

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P45B	12.25	718.86	TH
		9/01/2013	P45B	11.95	719.16	HG
		17/04/2013	P45B	11.35	719.76	HG
		2/08/2013	P45B	12.15	718.96	HG
2012/13	Minimum			11.35	718.86	
	Maximum			12.25	719.76	
	Average			11.93	719.19	
	StdDev			0.403113	0.403113	
	Count			4	4	

T-11.3 - Piezometer Water Level Results - P58A & P58B

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler	Comments
		29/11/2012	P58A	42.04	764.21	TH	
		9/01/2013	P58A	42.05	764.20	HG	
		17/04/2013	P58A	42.05	764.20	HG	
		2/08/2013	P58A	42.05	764.20	HG	
2012/13	Minimum			42.04	764.2		
	Maximum			42.05	764.21		
	Average			42.0475	764.2025		
	StdDev			0.005	0.005		
	Count			4	4		

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P58B	52.53	753.72	TH
		9/01/2013	P58B	52.10	754.15	HG
		17/04/2013	P58B	57.65	748.60	HG
		2/08/2013	P58B	60.25	746.00	HG
2012/13	Minimum			52.10	746.00	
	Maximum			60.25	754.15	
	Average			55.63	750.62	
	StdDev			3.98	3.98	
	Count			4	4	

T-11.4 - Piezometer Water Level Results - P59A & P59B

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P59A	17.68	787.02	TH
		9/01/2013	P59A	17.75	786.95	HG
		17/04/2013	P59A	17.85	786.85	HG
		2/08/2013	P59A	17.6	787.10	HG
2012/13	Minimum			17.6	786.85	
	Maximum			17.85	787.1	
	Average			17.72	786.98	
	StdDev			0.106145	0.106145	
	Count			4	4	

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P59B	18.35	786.35	TH
		9/01/2013	P59B	18.45	786.25	HG
		17/04/2013	P59B	19.5	785.20	HG
		2/08/2013	P59B	19.25	785.45	HG
2012/13	Minimum			18.35	785.2	
	Maximum			19.5	786.35	
	Average			18.8875	785.8125	
	StdDev			0.573549	0.573549	
	Count			4	4	

T-11.5 - Piezometer Water Level Results - P100A & P100B

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P100A	30.4	746.03	TH
		9/01/2013	P100A	29.8	746.63	HG
		17/04/2013	P100A	30.85	745.58	HG
		2/08/2013	P100A	30.5	745.93	HG
2012/13	Minimum			29.8	745.58	
	Maximum			30.85	746.63	
	Average			30.3875	746.0425	
	StdDev			0.436606	0.436606	
	Count			4	4	

EPL 11436	Statistics	Date	Site Code	Depth to Water m	RL water level	Sampler
		29/11/2012	P100B	78.14	698.29	TH
		9/01/2013	P100B	78.14	698.29	HG
		17/04/2013	P100B	78.14	698.29	HG
		2/08/2013	P100B	78.14	698.29	HG
2012/13	Minimum			78.14	698.29	
	Maximum			78.14	698.29	
	Average			78.14	698.29	
	StdDev			0.00	0.00	
	Count			4	4	

T-12 - Water Volume Results - Evaporation Dam 3

Date	ED3S	ED3N	ED3N Lagoon 1	ED3N Lagoon 2	ED3N Lagoon 3	Total Volume ED3 System
	Volume ML	Volume ML	Volume ML	Volume ML	Volume ML	
Oct-12	124.6	69.71	17.84	13.71	9.71	235.57
Nov-12	125.4	66.44	18.08	13.13	9.16	232.21
Dec-12	124.3	62.51	17.36	12.35	8.51	225.03
Jan-2013	108.6	59.70	17.30	11.66	7.88	205.13
Feb-2013	115	56.93	14.36	11.10	7.41	204.80
Mar-2013	116.3	54.88	17.93	10.67	7.21	206.99
Apr-2013	112.2	51.54	17.52	10.12	6.75	198.12
May-2013	112.2	49.24	11.57	9.75	7.31	190.08
Jun-2013	116.2	63.04	6.59	10.82	12.92	209.57
Jul-2013	112.3	63.93	0	10.97	13.21	200.41
Aug-2013	110.4	62.16	0.00	10.69	17.43	200.67
Sep-2013	119	62.86	3.48	10.64	17.39	213.37
Minimum	108.6	49.24	0.00	9.75	6.75	190.08
Mean	116.38	60.24	11.84	11.30	10.41	210.16
Maximum	125.4	69.71	18.08	13.71	17.43	235.57

T-13.1 - IMF Surface Water Results - Site 110

	Statistics	Field Information										Analytical Information														
EPL 11455		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Total Kjeldahl Nitrogen	Total Organic Carbon	Oil & Grease	Phosphorous	Total Copper	Total Iron	Total Lead	Total Zinc
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		12/10/2012	Site 110	8.57	TH	6.81	1608	7.9	10.51	24.1	High flow, 38.5mm in 24hrs + snow	909157	0.1	3	1600	7.8	120	37	980	1.2	16	1	0.09	0.007	0.8	0.0028	0.2
		28/11/2012	Site 110	8.46	TH	7.23	643	16.8	5.45	2.8	High flow, 35.5mm in 24hrs.	916164	0.1	2	600	7.3	52	13	460	1.2	20	1	0.11	0.006	0.37	0.0007	0.11
		29/01/2013	Site 110	9.44	TH	6.55	741	19	5.47	74.1	High flow, 28mm in 24hrs.	924387	0.1	4	730	7	140	7	590	1.4	24	1	0.14	0.014	0.53	0.0016	0.46
		12/06/2013	Site 110	2:30pm	DS	8.22	1074	8.6	9.96	N/A		943272	0.1	2	1100	7.6	190	2	640	0.47	10	1	0.02	0.0021	0.14	0.0001	0.048
		30/08/2013	Site 110	14:00pm	DS	7.39	1449	12.1	9.28	113		953702	0.1	2	1500	7.7	170	3	1100	0.4	8	1	0.01	0.004	0.12	0.0002	0.17
2012/13	Minimum					6.55	643	7.9	5.45	2.8			0.1	2	600	7	52	2	460	0.4	8	1	0.01	0.0021	0.12	0.0001	0.048
	Maximum					8.22	1608	19	10.51	113			0.1	4	1600	7.8	190	37	1100	1.4	24	1	0.14	0.014	0.8	0.0028	0.46
	Average					7.3475	976.75	14.125	7.54	63.3			0.1	2.6	1106	7.48	134.4	12.4	754	0.934	15.6	1	0.074	0.00662	0.392	0.00108	0.1976
	StdDev					0.64109	423.741077	4.91294209	2.4796	49.663736			0	0.894427191	446.295866	0.32711	53.3554	14.41526968	272.544	0.46344	6.69328021	0	0.056833089	0.00453564	0.28438	0.00113	0.15786
	Count					5	5	5	5	4			5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

T-13.2 - IMF Surface Water Results - Site 130

	Statistics	Field Information										Analytical Information														
EPL 11455		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Total Kjeldahl Nitrogen	Total Organic Carbon	Oil & Grease	Phosphorous	Total Copper	Total Iron	Total Lead	Total Zinc
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		12/10/2012	Site 130	9.29	TH	7.15	486	7.2	10.59	46.9	High flow, 38.5mm in 24hrs + snow	909158	0.1	5	490	7.4	11	44	320	1.2	17	1	0.11	0.002	2.1	0.0017	0.011
		28/11/2012	Site 130	9.16	TH	7.18	444	17.6	5.97	-28.5	High flow, 35.5mm in 24hrs.	916165	1	2	450	7.4	12	14	290	0.9	16	1	0.05	0.004	1.1	0.0059	0.05
		29/01/2013	Site 130	10.15	TH	6.6	510	19.8	7.11	70.9	High flow, 28mm in 24hrs.	924388	0.1	4	490	7.2	51	13	340	0.9	17	1	0.06	0.003	0.9	0.0026	0.03
		12/06/2013	Site 130	3:15pm	DS	7.81	626	8.6	9.59	N/A	Rain event sampling >25mL	943059	0.1	2	570	7.6	28	2	350	0.4	8	1	0.01	0.0014	0.17	0.00012	0.005
		30/08/2013	Site 130	13:35pm	DS	7.39	593	15.5	10.32		Event Sampling following thunderstorm the previous night	953704	0.1	2	630	8.2	37	3	370	0.46	8	1	0.01	0.002	0.3	0.0002	0.005
2012/13	Minimum					6.6	444	7.2	5.97	-28.5			0.1	2	450	7.2	11	2	290	0.4	8	1	0.01	0.0014	0.17	0.00012	0.005
	Maximum					7.81	626	19.8	10.59	70.9			1	5	630	8.2	51	44	370	1.2	17	1	0.11	0.004	2.1	0.0059	0.05
	Average					7.226	531.8	13.74	8.716	29.766667			0.28	3	526	7.56	27.8	15.2	334	0.772	13.2	1	0.048	0.00248	0.914	0.0021	0.0202
	StdDev					0.4381	75.6650514	5.56578835	2.05963	51.867652			0.40429224	1.414213562	72.6636085	0.38471	16.9912	17.02057578	30.4959	0.33604	4.7644517	0	0.041472883	0.00102567	0.77005	0.00237	0.01956
	Count					5	5	5	5	3			5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

T-13.3 - IMF Surface Water Results - Site 150

	Statistics	Field Information										Analytical Information														
EPL 11455		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Total Kjeldahl Nitrogen	Total Organic Carbon	Oil & Grease	Phosphorous	Total Copper	Total Iron	Total Lead	Total Zinc
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		12/10/2012	Site 150	9.44	TH	7.13	878	8.6	9.94	47.5	High flow, 38.5mm in 24hrs + snow	909159	0.1	3	880	7.7	43	38	500	0.9	13	1	0.07	0.004	1.6	0.0025	0.07
		28/11/2012	Site 150	9.37	TH	7.12	1017	18.6	4.86	-27.2	High flow, 35.5mm in 24hrs.	916166	0.1	2	1000	7.6	40	4	580	0.4	10	1	0.03	0.001	0.38	0.0002	0.012
		29/01/2013	Site 150	Dry	TH	0	0	0	0	0	Dry	N/A															
		12/06/2013	Site 150	3:40pm	DS	8.2	850	8.9	10.36	N/A	Rain event >25mm	943061	0.1	2	860	8	81	5	510	0.4	8	1	0.01	0.0017	0.02	0.00005	0.016
		30/08/2013	Site 150	14:20	DS	7.65	858	15.9	10.02	-89	Event sampling	953703	0.1	2	920	8	76	11	540	0.59	8	1	0.03	0.003	0.15	0.0002	0.033
2012/13	Minimum					7.12	850	8.6	4.86	-89			0.1	2	860	7.6	40	4	500	0.4	8	1	0.01	0.001	0.02	0.00005	0.012
	Maximum					8.2	1017	18.6	10.36	47.5			0.1	3	1000	8	81	38	580	0.9	13	1	0.07	0.004	1.6	0.0025	0.07
	Average					7.525	900.75	13	8.795	-22.9			0.1	2.25	915	7.825	60	14.5	532.5	0.5725	9.75	1	0.035	0.002425	0.5375	0.00074	0.03275
	StdDev					0.51358	78.3895189	5.03123577	2.62965	68.351518			0	0.5	61.91391874	0.20616	21.4942	15.96871942	35.9398	0.23599	2.36290781	0	0.025166115	0.0013376	0.7238	0.00118	0.02645
	Count					4	4	4	4	3			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

T-13.4 - IMF Surface Water Results - First Flush System

	Statistics	Field Information										Analytical Information														
EPL 11455		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Total Kjeldahl Nitrogen	Total Organic Carbon	Oil & Grease	Phosphorous	Total Copper	Total Iron	Total Lead	Total Zinc
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		12/10/2012	First Flush	9.15	TH	7.38	93.8	8.4	10.42	38.2	High flow, 38.5mm in 24hrs + snow	909160	0.1	3	82	7.4	4	34	58	0.5	5	1	0.07	0.012	1.2	0.026	0.12
		28/11/2012	First Flush	8.57	TH	7.23	167.7	17.6	3.45	21.1	High flow, 35.5mm in 24hrs.	916168	0.1	9	140	7.1	8.9	40	97	1.1	10	1	0.11	0.009	0.99	0.011	0.06
		29/01/2013	First Flush	10.02	TH	7.11	92.6	19.8	5.15	41	Low flow, 28mm in 24hrs.	924390	0.1	4	98	7.1	6.2	28	83	0.75	6	1	0.08	0.006	0.6	0.0061	0.075
		12/06/2013	First Flush	3:00pm	DS	8.2	128.9	9.5	10.92	N/A	Rain event (>25mL)	943060	0.1	8	150	7.5	11	20	83	1	10	1	0.08	0.0031	0.07	0.00056	0.013
		30/08/2013	First Flush	13:15pm	DS	7.23	129	14.6	9.63	126	Event sampling	953705	0.1	4	130	7.6	9.7	29	100	0.66	7	1	0.03	0.006	0.2	0.0016	0.096
2012/13	Minimum					7.11	92.6	8.4	3.45	21.1			0.1	3	82	7.1	4	20	58	0.5	5	1	0.03	0.0031	0.07	0.00056	0.013
	Maximum					8.2	167.7	19.8	10.92	126			0.1	9	150	7.6	11	40	100	1.1	10	1	0.11	0.012	1.2	0.026	0.12
	Average					7.43	122.4	13.98	7.914	56.575			0.1	5.6	120	7.34	7.96	30.2	84.2	0.802	7.6	1	0.074	0.00722	0.612	0.00905	0.0728
	StdDev					0.44096	30.9995968	4.96407091	3.38481	47.111667			0	2.701851217	28.8444102	0.23022	2.82542	7.429670248	16.6042	0.24601	2.30217289	0	0.028809721	0.00338999	0.48792	0.01034	0.04034
	Count					5	5	5	5	4			5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

T-14 - Dust Deposition Results - DG18

Site Name	Date	ALS Batch Code	Ash Residue	Combustibles	Calculated Rainfall	Soluble Matter	Insoluble Solids	Total Solids
			g/m2/mth	g/m2/mth	mm	g/m2/mth	g/m2/mth	g/m2/mth
DG18	EN1203954	**Sep-12**	0.3	0.4	57	1.2	0.7	1.9
DG18	EN1204270	**Oct-12**	0.2	0.1	69	0.1	0.2	0.3
DG18	EN1204669	**Nov-12**	0.5	0.7	54	0.1	1.2	1.2
DG18	EN1300149	**Dec-12**	1.2	0.5	39	1	1.7	2.7
DG18	EN1300465	**Jan-13**	0.7	0.1	106	0.6	0.8	1.4
DG18	EN1301001	**Feb-13**	0.7	0.2	103	1.5	0.9	2.4
DG18	EN1301400	**Mar-13**	1.2	0.1	13	1.3	1.3	2.6
DG18	939391	**Apr-13**	0.57	0.24	15	0.2	0.8	0.8
DG18	943029	**May-13**	0.53	0.21	69	0.2	0.7	0.7
DG18	947147	**Jun-13**	0.52	0.23	110	0.2	0.8	1
DG18	950795	**Jul-13**	0.17	0.15	37	0.1	0.3	0.4
DG18	954242	**Aug-13**	0.28	0.22	0	0.1	0.5	0.6

2012/2013	Min	0.17	0.1	0	0.1	0.2	0.3
	Avg	1.2	0.7	110	1.5	1.7	2.7
	Max	0.57	0.26	56.00	0.55	0.83	1.33
	stDev	0.34	0.18	37.28	0.55	0.42	0.86

T-2 - Subsurface Gas Results

	31/10/2012	31/01/2013	28/06/2013	5/09/2013
GMBH1*	0	0	0	0
GMBH2*	0	0	0	0
GMBH4*	0	0	0	0

	GMBH1	GMBH2	GMBH4
Min	0	0	0
Average	0	0	0
Max	0	0	0

* Note: Purged readings only

T-3 - Landfill Gas Extraction Booster Results

EPL 11436	Date	Carbon Dioxide	Dry Gas Density	Moisture Content	Molecular weight of stack gases	Oxygen	Temperature	Volatile Organic Compounds	Volumetric Flow rate	Volumetric Flow rate	Methane
		%	%	%	mg/m3	%	Deg C	mg/m3	m3/hour	m3/sec	%
	1/06/2011	37.04			N/A	1.09	22.2		771.83	0.21	
	14/10/2011	34.8	11617	8.5	30.17	1.6	447	0.09	5380	1.49	48.6
	6/05/2013	36.1			N/A	0.53	32.2	See Attached Appendix	2124	0.59	61.4
OVERALL	Minimum	34.8	11617	8.5	30.17	0.53	22.2	0.09	771.83	0.21	48.6
	Maximum	37.04	11617	8.5	30.17	1.6	447	0.09	5380	1.49	61.4
	Average	35.98	11617.00	8.50	30.17	1.07	167.13	0.09	2758.61	0.77	55.00
	StdDev	1.12	N/A	N/A	N/A	0.54	242.42	N/A	2368.72	0.66	9.05
	Count	3	1	1	1	3	3	1	3	3	2

T-4.1 - Surface Gas Results

19/12/2012

Transect	Time	No of measurements	Min Methane(%)	Max Methane (%)	Average Methane (%)
1	8:00:00 AM	3	0.0003	0.0396	0.0142
2		12	0.0003	0.3847	0.0551
3		13	0.0004	0.0432	0.0125
4		10	0.0027	0.1836	0.0596
5		21	0.0009	0.1864	0.0384
6		21	0.0007	0.5865	0.0822
7		16	0.0021	0.2478	0.0459
8		17	0.0070	0.2516	0.0833
9		19	0.0038	0.3877	0.0604
10		19	0.0022	0.2724	0.0273
11		15	0.0005	0.052	0.021
12		14	0.0012	0.0628	0.019
13	11:00:00 AM	11	0.0011	0.2192	0.0453
Total Measurements		**191**		**Site Average**	**0.043**

T-4.2 - Surface Gas Results

17/05/2013

Transect	Time	No of measurements	Min Methane (%)	Max Methane (%)	Average Methane (%)
1	7:30:00 AM	10	0.0032	0.0224	0.0115
2		11	0.0041	0.0326	0.0148
3		13	0.0008	0.0345	0.0079
4		14	0.0007	0.0347	0.0082
5		19	0.0007	0.0349	0.0083
6		18	0.0012	0.0693	0.0142
7		15	0.0008	0.0345	0.0131
8		12	0.0018	0.0157	0.0066
9		12	0.0043	0.0310	0.0132
10		16	0.0038	0.0443	0.0170
11		15	0.0077	0.0633	0.0233
12		12	0.0030	0.0690	0.0132
13	9:30:00 AM	11	0.0034	0.0386	0.0130
Total Measurements		**178**		**Site Average**	**0.013**

T-4.3 - Surface Gas Results

26/07/2013

Transect	Time	No of measurements	Min Methane (%)	Max Methane (%)	Average Methane (%)
1	8:00:00 AM	9	0.0023	0.0278	0.0069
2		12	0.0025	0.0162	0.0057
3		12	0.0011	0.0052	0.0032
4		13	0.0018	0.0135	0.0053
5		14	0.0010	0.0162	0.0050
6		15	0.0017	0.0115	0.0047
7		12	0.0015	0.0348	0.0078
8		14	0.0017	0.0183	0.0074
9		17	0.0021	0.0308	0.0109
10		12	0.0028	0.0246	0.0090
11		10	0.0019	0.0064	0.0040
12		12	0.0017	0.0088	0.0052
13	10:00:00 AM	12	0.0043	0.0173	0.1025
Total Measurements		**164**		**Site Average**	**0.014**

T-4.4 - Surface Gas Results

27/08/2013

Transect	Time	No of measurements	Min Methane (%)	Max Methane (%)	Average Methane (%)
1	12:00:00 PM	6	0.0135	0.0288	0.0210
2		12	0.0074	0.0358	0.0172
3		11	0.0040	0.0318	0.0152
4		12	0.0020	0.0158	0.0096
5		13	0.0022	0.0309	0.0120
6		13	0.0022	0.0258	0.0084
7		13	0.0039	0.0210	0.0096
8		17	0.0024	0.0398	0.0180
9		16	0.0033	0.0257	0.0115
10		9	0.0060	0.0308	0.0168
11		5	0.0023	0.0216	0.0122
12					
13	3:00:00 PM				
Total Measurements		**127**		**Site Average**	**0.014**

T-5 - Landfill Gas Flare Results

Measurement	Units	Reading
Temperature	°C	1090
Residence Time	Seconds	0.3

T-6.1 - Landfill Gas Engine Results - Generator 1

EPL 11436

Note: A TAN coloured cell indicates that the indicated value is LESS THAN (<) indicated

							EPL Limit		**EPL Limit**						**EPL Limit**
							450		**100**						**5**
	Date	Carbon Dioxide	Carbon Monoxide	Dry Gas Density	Moisture Content	Molcular Weight Of Stack Gases	Nitrogen Oxides	Oxygen	Sulfuric Acid Mist & Sulfur Trioxides S03	Sulphur Dioxide	Temperature	Velocity	Volatile Organic Compounds	Volumetric Flowrate	Hydrogen Sulphide
		%	*mg/m3*	*kg/m3*	*%*	*gr/gr mole*	*mg/m3*	*%*	*mg/m3*	*mg/m3*	*Deg C*	*m/sec*	*mg/m3*	*m3/sec*	*mg/m3*
	3/04/2009	11.6	962	1.35	5.6	30.2	318	8.2	6.58	21	455	50.5	3.62	1.71	0.31
	10/02/2010	13.3	1073	1.36	5.3	30.472	400	8.2	10.4	3	475	46.4	1.74	1.59	0.37
	30/06/2011	10.4	1011	1.34	3.3	30.032	382	9.2	8.13	56	418	42.9	4.14	1.6	0.34
	20/06/2012	11.6	997	1.35	8.3	30.172	385	8.2	11.3	214	447	45	0.09	1.49	0.326
	11/06/2013	Generator 1 was not available													
OVERALL	Minimum	10.4	962	1.34	3.3	30.032	318	8.2	6.58	3	418	42.9	0.09	1.49	0.31
	Maximum	13.3	1073	1.36	8.3	30.472	400	9.2	11.3	214	475	50.5	4.14	1.71	0.37
	Average	11.73	1010.75	1.35	5.63	30.22	371.25	8.45	9.10	73.50	448.75	46.20	2.40	1.60	0.34
	StdDev	1.19	46.33	0.01	2.05	0.18	36.36	0.50	2.15	96.22	23.64	3.21	1.85	0.09	0.03
	Count	4	4	4	4	4	4	4	4	4	4	4	4	4	4

T-6.2 - Landfill Gas Engine Results - Generator 2

EPL 11436

							EPL Limit		EPL Limit						EPL Limit
							450		100						5
	Date	Carbon Dioxide	Carbon Monoxide	Dry Gas Density	Moisture Content	Molcular Weight Of Stack Gases	Nitrogen Oxides	Oxygen	Sulfuric Acid Mist & Sulfur Trioxides S03	Sulphur Dioxide	Temperature	Velocity	Volatile Organic Compounds	Volumetric Flowrate	Hydrogen Sulphide
		%	*mg/m3*	*kg/m3*	*%*	*gr/gr mole*	*mg/m3*	*%*	*mg/m3*	*mg/m3*	*Deg C*	*m/sec*	*mg/m3*	*m3/sec*	*mg/m3*
	8/12/2008	9.3	674	1.31	6.2	29.4	449	10	7.88	10	437	44.7	4.17	1.55	
	23/06/2010	13.4	799	1.36	5.4	30.48	411	8.4	4.23	3	368	41.7	0.086	1.61	0.36
	30/06/2011	11.4	750	1.35	4.8	30.152	402	8.2	8.89	109	415	43.6	4.1	1.59	0.33
	20/06/2012	9.8	1011	1.34	8.1	29.944	384	9	7.9	255	432	44.7	0.18	1.52	3.354
	11/06/2013	10.1	981	1.34	5	29.976	296	9	5	136	464	45	3.71	1.51	0.35
OVERALL	Minimum	9.30	674.00	1.31	4.80	29.40	296.00	8.20	4.23	3.00	368.00	41.70	0.09	1.51	0.33
	Maximum	13.40	1011.00	1.36	8.10	30.48	449.00	10.00	8.89	255.00	464.00	45.00	4.17	1.61	3.35
	Average	10.80	843.00	1.34	5.90	29.99	388.40	8.92	6.78	102.60	423.20	43.94	2.45	1.56	0.35
	StdDev	1.65	146.98	0.02	1.34	0.39	56.84	0.70	2.04	103.53	35.52	1.36	2.12	0.04	1.50
	Count	5	5	5	5	5	5	5	5	5	5	5	5	5	4

Note: A TAN coloured cell indicates that the indicated value is LESS THAN (<) indicated

T-6.3 - Landfill Gas Engine Results - Generator 3

EPL 11436

Note: A TAN coloured cell indicates that the indicated value is LESS THAN (<) indicated

							EPL Limit		EPL Limit						EPL Limit
							450		100						5
	Date	Carbon Dioxide	Carbon Monoxide	Dry Gas Density	Moisture Content	Molcular Weight Of Stack Gases	Nitrogen Oxides	Oxygen	Sulfuric Acid Mist & Sulfur Trioxides S03	Sulphur Dioxide	Temperature	Velocity	Volatile Organic Compounds	Volumetric Flowrate	Hydrogen Sulphide
		%	*mg/m3*	*kg/m3*	*%*	*gr/gr mole*	*mg/m3*	*%*	*mg/m3*	*mg/m3*	*Deg C*	*m/sec*	*mg/m3*	*m3/sec*	*mg/m3*
	8/04/2010	7.5	304	1.35	6	30.138	322	14.7	6.25	3	345	46.2	0.09	1.89	0.288
	30/06/2011	10.5	869	1.34	3.8	30.04	317	9	11.1	120	438	48.7	25	1.75	0.33
	20/06/2012	10.6	926	1.34	3.8	30.032	359	8.3	5.65	266	421	45.8	3.87	1.65	0.34
	11/06/2013	9.6	622	1.34	7.1	29.992	323	10.8	7.15	83	476	51.3	3.12	1.66	0.32
OVERALL	Minimum	7.50	304.00	1.34	3.80	29.99	317.00	8.30	5.65	3.00	345.00	45.80	0.09	1.65	0.29
	Maximum	10.60	926.00	1.35	7.10	30.14	359.00	14.70	11.10	266.00	476.00	51.30	25.00	1.89	0.34
	Average	9.55	680.25	1.34	5.18	30.05	330.25	10.70	7.54	118.00	420.00	48.00	8.02	1.74	0.32
	StdDev	1.44	283.42	0.01	1.65	0.06	19.35	2.87	2.45	110.09	55.03	2.55	11.44	0.11	0.02
	Count	4	4	4	4	4	4	4	4	4	4	4	4	4	4

T-6.4 - Landfill Gas Engine Results - Generator 4

EPL 11436

							EPL Limit		EPL Limit						EPL Limit
							450		100						5
	Date	Carbon Dioxide	Carbon Monoxide	Dry Gas Density	Moisture Content	Molcular Weight Of Stack Gases	Nitrogen Oxides	Oxygen	Sulfuric Acid Mist & Sulfur Trioxides S03	Sulphur Dioxide	Temperature	Velocity	Volatile Organic Compounds	Volumetric Flowrate	Hydrogen Sulphide
		%	*mg/m3*	*kg/m3*	*%*	*gr/gr mole*	*mg/m3*	*%*	*mg/m3*	*mg/m3*	*Deg C*	*m/sec*	*mg/m3*	*m3/sec*	*mg/m3*
	20/06/2012	10.3	686	1.34	5.7	29.964	391	8.3	9.64	278	425	45.3	3.77	1.6	0.327
	11/06/2013	9.4	784	1.33	4.6	29.884	267	9.5	5.72	121	436	52.9	3.87	1.87	0.29

Note: A TAN coloured cell indicates that the indicated value is LESS THAN (<) indicated

OVERALL	Minimum	9.40	686.00	1.33	4.60	29.88	267.00	8.30	5.72	121.00	425.00	45.30	3.77	1.60	0.29
	Maximum	10.30	784.00	1.34	5.70	29.96	391.00	9.50	9.64	278.00	436.00	52.90	3.87	1.87	0.33
	Average	9.85	735.00	1.34	5.15	29.92	329.00	8.90	7.68	199.50	430.50	49.10	3.82	1.74	0.31
	StdDev	0.64	69.30	0.01	0.78	0.06	87.68	0.85	2.77	111.02	7.78	5.37	0.07	0.19	0.03
	Count	2	2	2	2	2	2	2	2	2	2	2	2	2	2

T-6.4 - Landfill Gas Engine Results - Generator 5

								EPL Limit		EPL Limit						EPL Limit
								450		100						5
EPL 11436		Date	Carbon Dioxide	Carbon Monoxide	Dry Gas Density	Moisture Content	Molcular Weight Of Stack Gases	Nitrogen Oxides	Oxygen	Sulfuric Acid Mist & Sulfur Trioxides S03	Sulphur Dioxide	Temperature	Velocity	Volatile Organic Compounds	Volumetric Flowrate	Hydrogen Sulphide
			%	*mg/m3*	*kg/m3*	*%*	*gr/gr mole*	*mg/m3*	*%*	*mg/m3*	*mg/m3*	*Deg C*	*m/sec*	*mg/m3*	*m3/sec*	*mg/m3*
	Generator 5	11/06/2013	10.7	922	1.34	5.5	30.048	318	8.4	5.87	30	474	46.8	4.13	1.55	0.33

T-7.2 - Dust Deposition Results - DG24

Site Name	ALS Batch Code	Date	Ash Residue	Combustibles	Calculated Rainfall	Soluble Matter	Insoluble Solids	Total Solids
			g/m2/mth	g/m2/mth	mm	g/m2/mth	g/m2/mth	g/m2/mth
DG24	EN1203954	Sep-12	2.1	0.4	67	1.4	2.5	3.9
DG24	EN1204270	Oct-12	0.8	0.1	54	0.1	0.9	1
DG24	EN1204669	Nov-12	1	0.9	61	0.1	1.9	1.9
DG24	EN1300149	Dec-12	0.6	0.1	44	1.9	0.6	2.5
DG24	EN1300465	Jan-13	2.6	0.6	103	5.5	3.2	8.7
DG24	EN1301001	Feb-13	1.3	0.1	115	5.7	1.3	7
DG24	EN1301400	Mar-13	2.5	0.6	12	4.6	3.1	7.7
DG24	939389	Apr-13	0.93	0.47	12	0.2	1.4	1.4
DG24	943026	May-13	0.78	0.32	73	0.2	1.1	1.1
DG24	947145	Jun-13	0.43	0.29	110	0.8	0.7	1.5
DG24	950793	Jul-13	0.32	0.11	32	0.1	0.4	0.5
DG24	954240	Aug-13	0.42	0.15	14	0.3	0.6	0.9

Min	0.32	0.1	12	0.1	0.4	0.5
Avg	1.15	0.35	58.08	1.74	1.48	3.18
Max	2.6	0.9	115	5.7	3.2	8.7
stDev	0.81	0.26	37.35	2.21	0.98	2.95

T-8.1 - Surface Water Results - Site 115

	Statistics	Field Information										Analytical Information							
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/09/2012	Site 115	11.41	TH	7.9	3170	13.7	9.86	27.5	No flow	905093	0.1	2	3100	8	2200	11	1.2
		12/10/2012	Site 115	10.52	TH	7.05	906	8.2	10.83	20.7	High flow, 38.5mm in 24hrs + snow	909155	0.1	4	920	7.8	650	18	3
		28/11/2012	Site 115	10.42	TH	7.03	1880	16.1	3.75	36	Low flow, 35.5mm in 24hrs.	916154	0.1	5	1900	7.5	1400	23	6.2
		29/01/2013	Site 115	11.01	TH	6.91	1852	20.7	5.89	27.5	Medium flow, 28mm in 24hrs.	924378	0.2	2	1800	7.5	1500	25	7.2
		13/06/2013	Site 115	1:00pm	DS	7.98	3880	11.1	9.03	199		943259	0.1	2	3800	7.8	2900	16	3.5
		25/06/2013	Site 115	12:55pm	DS	7.25	246	8.8	10.29	211		944741	0.1	4	240	7.5	250	15	3.3
'<' removed from <LOR values																			
2012/13	Minimum					6.91	246.00	8.20	3.75	20.70			0.10	2.00	240.00	7.50	250.00	11.00	1.20
	Maximum					7.98	3880.00	20.70	10.83	211.00			0.20	5.00	3800.00	8.00	2900.00	25.00	7.20
	Average					7.35	1989.00	13.10	8.28	86.95			0.12	3.17	1960.00	7.68	1483.33	18.00	4.07
	StdDev					0.47	1357.37	4.77	2.82	91.65			0.04	1.33	1323.21	0.21	974.00	5.22	2.22
	Count					6.00	6.00	6.00	6.00	6.00			6.00	6.00	6.00	6.00	6.00	6.00	6.00

T-8.2 - Surface Water Results - Spring 2

	Statistics	Field Information										Analytical Information							
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/09/2012	Spring 2	10.24	TH	6.36	1242	12.9	9.55	26.4	No flow	905094	0.1	2	1200	6.5	840	17	4.7
		12/10/2012	Spring 2	10.25	TH	7.05	379	8.2	9.95	31.2	High flow, 38.5mm in 24hrs + snow	909156	0.1	4	390	6.3	280	14	2.2
		6/12/2012	Spring 2	10.34	TH	8.26	925	17.1	13.73	34.6	No flow	917656	0.1	8	900	7.5	690	22	14
		29/01/2013	Spring 2	8.51	TH	5.98	670	18.3	5.9	128.6	Medium flow, 28mm in 24hrs.	924372	1.2	7	650	5.4	470	23	19
		13/06/2013	Spring 2	1:48pm	DS	7.82	561	10.1	12.23	264	Rain event>25mLs	943260	0.3	8	580	7.4	420	20	11
		25/06/2013	Spring 2	2:05pm	DS	6.94	244	9.3	10.32	254		944737	0.1	2	230	6.3	160	9	3
'<' removed from <LOR values																			
2012/13	Minimum					5.98	244.00	8.20	5.90	26.40			0.10	2.00	230.00	5.40	160.00	9.00	2.20
	Maximum					8.26	1242.00	18.30	13.73	264.00			1.20	8.00	1200.00	7.50	840.00	23.00	19.00
	Average					7.07	670.17	12.65	10.28	123.13			0.32	5.17	658.33	6.57	476.67	17.50	8.98
	StdDev					0.86	366.13	4.23	2.67	111.93			0.44	2.86	350.28	0.78	252.88	5.32	6.78
	Count					6.00	6.00	6.00	6.00	6.00			6.00	6.00	6.00	6.00	6.00	6.00	6.00

T-8.3 - Surface Water Results - Site 105

	Statistics	Field Information										Analytical Information							
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/09/2012	Site 105	10.39	TH	6.29	3460	11.3	10.44	11.7	Medium flow	905092	0.1	2	3400	7.9	1900	14	0.5
		12/10/2012	Site 105	10.02	TH	7.16	1417	6.6	10.36	36.8	High flow, 38.5mm in 24hrs + snow	909154	0.1	3	1400	7.7	970	15	1.8
		28/11/2012	Site 105	9.56	TH	7.52	1010	17.2	4.11	-31	High flow, 35.5mm rain in 24hrs	916153	0.1	13	1000	7.1	640	27	8.1
		29/01/2013	Site 105	9.08	TH	6.35	340	18.2	6.73	85	Medium flow, 28mm rain in 24hrs	924377	0.1	3	340	6.9	270	14	3.8
		13/06/2013	Site 105	2:20pm	DS	7.76	2770	10.5	1.1	201	Rain event>25mL	943261	0.1	3	2700	7.4	1900	22	14
		25/06/2013	Site 105	2:05pm	DS	7.29	665	9.1	9.97	211			0.1	2	650	7.5	430	15	4.1
'<' removed from <LOR values																			
2012/13	Minimum					6.29	340.00	6.60	1.10	-31.00			0.10	2.00	340.00	6.90	270.00	14.00	0.50
	Maximum					7.76	3460.00	18.20	10.44	211.00			0.10	13.00	3400.00	7.90	1900.00	27.00	14.00
	Average					7.06	1610.33	12.15	7.12	85.75			0.10	4.33	1581.67	7.42	1018.33	17.83	5.38
	StdDev					0.62	1084.25	4.61	3.78	113.75			0.00	5.19	1053.42	0.28	742.29	6.14	4.76
	Count					6.00	6.00	6.00	6.00	6.00			6.00	6.00	6.00	6.00	6.00	6.00	6.00

T-8.4 - Surface Water Results - Raw Water Dam (WM200)

	Statistics	Field Information										Analytical Information							
SML20 EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/09/2012	WM200	11.19	TH	6.41	1200	12.2	13.58	77.6	No flow	905080	0.1	2	1200	6.7	860	10	3.4
		12/10/2012	WM200	12.39	TH	5.37	1280	13.2	10.03	76.2	Medium flow, 38.5mm in 24hrs + snow	909150	0.1	2	1200	6.3	900	8	2.9
		6/12/2012	WM200	10.51	TH	7.68	1330	17.4	9.53	54.3	No flow	917657	0.1	2	1300	5.8	1000	9	4.1
		29/01/2013	WM200	13.29	TH	4.83	1437	21.7	8.71	124.5	Low flow, 28mm in 24hrs	924373	0.1	2	1300	5.6	940	15	5
		30/04/2013	WM200	11:32	DS	5.5	1568	15.2	9.97	258	Water milky	936874	0.1	2	1600	6.8	1200	11	4.6
'<' removed from <LOR values																			
2012/13	Minimum					4.83	1200.00	12.20	8.71	54.30			0.10	2.00	1200.00	5.60	860.00	8.00	2.90
	Maximum					7.68	1568.00	21.70	13.58	258.00			0.10	2.00	1600.00	6.80	1200.00	15.00	5.00
	Average					5.96	1363.00	15.94	10.36	118.12			0.10	2.00	1320.00	6.24	980.00	10.60	4.00
	StdDev					1.12	143.22	3.79	1.87	82.28			0.00	0.00	164.32	0.53	133.42	2.70	0.86
	Count					5.00	5.00	5.00	5.00	5.00			5.00	5.00	5.00	5.00	5.00	5.00	5.00

T-8.5 - Surface Water Results - Entrance Road Culvert (WM201)

	Statistics	Field Information										Analytical Information							
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/10/2012	WM201	8.29	TH	7.17	345	4.9	10.95	21.2	High flow, 38.5mm in 24hrs + snow	909581	0.1	2	200	6.2	200	10	1.9
		28/11/2012	WM201	10.1	TH	7.02	479	16.6	4.03	-35	Medium flow, 35.5mm in 24hrs.	916155	0.1	2	500	5.9	380	13	4
		29/01/2013	WM201	8.29	TH	6.24	283	17.1	6.77	65.7	High flow, 28mm in 24hrs.	924374	0.1	2	260	5.6	200	15	4.3
		30/04/2013	WM201	9:20	DS	4.81	20580	13.7	8.8	N/A	Slightly muddy	N/A							
		25/06/2013	WM201	2:45pm	DS	7.06	242	8.9	7.43	281		944743	0.1	2	240	6.5	180	12	3.6
	'<' removed from <LOR values																		
2012/13	Minimum					4.81	242.00	4.90	4.03	-35.00			0.10	2.00	200.00	5.60	180.00	10.00	1.90
	Maximum					7.17	20580.00	17.10	10.95	281.00			0.10	2.00	500.00	6.50	380.00	15.00	4.30
	Average					6.46	4385.80	12.24	7.60	83.23			0.10	2.00	300.00	6.05	240.00	12.50	3.45
	StdDev					0.99	9053.28	5.24	2.56	138.14			0.00	0.00	135.65	0.39	93.81	2.08	1.07
	Count					5.00	5.00	5.00	5.00	4.00			4.00	4.00	4.00	4.00	4.00	4.00	4.00

T-8.6 - Surface Water Results - Evaporation Dam 3 South (WM202)

	Statistics	Field Information										Analytical Information							
EPL 11436		Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
				AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
		12/09/2012	WM202	10.59	TH	3	6870	12.7	10.92	225	No flow	905085	55	2	6700	2.9	8400	5	6.5
		12/10/2012	WM202	12.23	TH	3.37	4480	11.6	10.25	211.3	Medium flow, 38.5mm in 24hrs + snow	909152	33	2	4600	3.1	5300	5	4.7
		6/12/2012	WM202	11.13	TH	3.38	7050	17.7	9.14	230.3		917658	60	2	7100	2.9	9100	5	9.1
		29/01/2013	WM202	13.1	TH	3.21	5940	22.1	8.76	234.1	Low flow, 28mm in 24hrs	924375	44	2	5900	2.9	7200	4	10
		30/04/2013	WM202	10:35am	DS	2.91	8410	14.3	9.46	542	Clear water	936875	70	2	8200	2.8	11000	6	12
	'<' removed from <LOR values																		
2012/13	Minimum					2.91	4480.00	11.60	8.76	211.30			33.00	2.00	4600.00	2.80	5300.00	4.00	4.70
	Maximum					3.38	8410.00	22.10	10.92	542.00			70.00	2.00	8200.00	3.10	11000.00	6.00	12.00
	Average					3.17	6550.00	15.68	9.71	288.54			52.40	2.00	6500.00	2.92	8200.00	5.00	8.46
	StdDev					0.21	1455.08	4.26	0.87	141.95			14.33	0.00	1347.22	0.11	2127.20	0.71	2.88
	Count					5.00	5.00	5.00	5.00	5.00			5.00	5.00	5.00	5.00	5.00	5.00	5.00

T-8.7 - Surface Water Results - Evaporation Dam 3 North (WM203)

Statistics	Field Information										Analytical Information							
EPL 11436	Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
			AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
	12/09/2012	WM203	11.09	TH	6.4	16510	12.2	10.24	121.4	No flow	905086	540	85	16000	4.8	15000	260	580
	12/10/2012	WM203	12.31	TH	4.65	14950	12.5	8.46	133.5	Medium flow, 38.5mm in 24hrs + snow	909153	470	86	15000	4.6	14000	220	500
	6/12/2012	WM203	11	TH	5.66	17260	19.9	7.93	126.3		917659	550	69	17000	4.5	18000	230	570
	29/01/2013	WM203	13.2	TH	4.26	17940	22.3	7.11	157.6	Low flow, 28mm in 24hrs	924376	570	65	18000	4.2	19000	220	650
	30/04/2013	WM203	9:37am	DS	2.91	8410	14.3	9.46	315		936876	660	45	20000	4.3	22000	240	680

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2012/13	Minimum	2.91	8410.00	12.20	7.11	121.40		470.00	45.00	15000.00	4.20	14000.00	220.00	500.00
	Maximum	6.40	17940.00	22.30	10.24	315.00		660.00	86.00	20000.00	4.80	22000.00	260.00	680.00
	Average	4.78	15014.00	16.24	8.64	170.76		558.00	70.00	17200.00	4.48	17600.00	234.00	596.00
	StdDev	1.34	3855.55	4.59	1.24	81.82		68.34	16.82	1923.54	0.24	3209.36	16.73	70.92
	Count	5.00	5.00	5.00	5.00	5.00		5.00	5.00	5.00	5.00	5.00	5.00	5.00

T-8.8 - Surface Water Results - Pond 3

Statistics	Field Information										Analytical Information							
EPL 11436	Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissovled Oxygen	Redox	Flow	Laboratory Sample Code	Nitrogen (ammonia)	Biochemical Oxygen Demand	Conductivity	pH	Total Dissolved Solids	Total Organic Carbon	Total Potassium
			AM/PM	Initials	pH	µS/cm	°C	mg/L	mV			mg/L	mg/L	µS/cm	pH	mg/L	mg/L	mg/L
	12/09/2012	Pond 3	12.13	TH	4.2	7110	13.3	0.33	152.1	No flow	905079	120	220	7000	4.1	8900	190	58
	12/10/2012	Pond 3	12.54	TH	3.04	4080	11.8	10.29	224.5	High flow, 38.5mm in 24hrs + snow	909149	30	18	4400	2.7	5000	23	13
	29/01/2013	Pond 3	12.58	TH	3.56	3350	21	8.39	228.2	Low flow, 28mm in 24hrs	924379	25	6	3300	3.1	3500	11	14
	13/06/2013	Pond 3	3:15 PM	DS	3.3	3200	N/A	8.8	451		943262	34	13	3200	3.3	3400	14	18

'<' removed from <LOR values

2012/13	Minimum	3.04	3200.00	11.80	0.33	152.10		25.00	6.00	3200.00	2.70	3400.00	11.00	13.00
	Maximum	4.20	7110.00	21.00	10.29	451.00		120.00	220.00	7000.00	4.10	8900.00	190.00	58.00
	Average	3.53	4435.00	15.37	6.95	263.95		52.25	64.25	4475.00	3.30	5200.00	59.50	25.75
	StdDev	0.50	1824.29	4.94	4.49	129.53		45.32	103.95	1768.95	0.59	2572.94	87.15	21.61
	Count	4.00	4.00	3.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00	4.00	4.00

Statistics **Field Information** **Analytical Information**

EPL 11436

T-9.1 - Leachate Results - Leachate Pond

Date	Site Code	Time	Sampler	pH	Cond.	Temp	ORP	DO	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Chromium (Hex)	Conductivity	Fluoride	Nitrate	Nitrite
		AM/PM	Initials	pH	µS/cm	°C	mV	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L
17/03/2011	LD	10.28	TH	7.94	30700	17.5	-25.6	0.23	829336	6390	0.1	6390	1900	3500	0.024	31000	2	1.6	0.01
30/03/2012	LD	10.37	TH	7.8	34300	16.8	0	0.19	882567	9710	0.1	9710	1800	5400	0.1	35000	0.26	6.9	0.23
22/05/2013	LD	2:30pm	CC	8.8	23000	N/A	N/A	N/A	940239	5170	2230	7400	270	4700	0.1	23000	9	5	1
29/05/2013	LD	#######	CC	N/A	N/A	N/A	N/A	N/A	941057										

Date	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Total Organic Carbon	Total Phosphorous
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L
17/03/2011	0.0001	2	0.001	1100	37000	29000	3900	40	48	40	100	7.6	5900	2000	26000	10400	5
30/03/2012	2.5	2.5	10	190	348000	21200	50	1	5	2	2	7.9	5100	3400	31000	13000	7.5
22/05/2013												8.8	1600	2400	18000	2900	26
29/05/2013	2	2	0.5	20	1360	4420	630	1	2	2	2						

Date	Total Aluminium	Total Arsenic	Total Barium	Total Cadmium	Total Calcium	Total Chromium	Total Cobalt	Total Copper	Total Lead	Total Magnesium	Total Manganese	Total Mercury	Total Phenols	Total Potassium	Total Sodium	Total Zinc
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17/03/2011	12	0.18	0.045	0.16	730	0.35	0.36	0.38	0.06	1100	0.82	0.0003	2.4	2100	3100	60
30/03/2012	17	0.188	0.067	0.055	660	0.41	0.15	0.32	0.17	1400	0.91	0.0012	1.57	2900	4400	52
22/05/2013	0.1	0.011	0.016	0.0004	36	0.62	0.1	0.19	0.0069	800	0.25	0.0011	<0.05	2000	3000	0.79
29/05/2013																

Statistics **Field Information**

EPL 11436

T-9.2 - Leachate Results - Leachate Recirculation System

Date	Site Code	Time	Sampler	pH	Cond.	Temp	ORP	DO	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chemical Oxygen Demand	Chloride	Chromium (Hex)	Conductivity	Fluoride	Nitrate	Nitrite
		AM/PM	Initials	pH	µS/cm	°C	mV	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L
17/03/2011	LR	9.54	TH	7.69	39800	28.4	-36.2	0.25	829337	16900	0.1	16900	3700	11100	3400	0.05	37000	1.5	0.89	0.07
30/03/2012	LR	10.51	TH	7.77	28500	28.8	0	0.22	882680	12600	0.1	12600	2300	5500	2500	0.1	27000	1.1	0.01	0.17
3/05/2013	LR	11:30am	CC	N/A	21000	N/A	N/A	N/A	937588	6550	500	7570	620	N/A	3800	0.1	21000	0.1	5	1

Date	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	pH	Sulphate	Total Suspended Solids	Total Dissolved Solids	Nitrate + Nitrite (oxidised nitrogen)
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	pH	mg/L	mg/L	mg/L	mg/L
17/03/2011	0.0001	0.001	2	550	13000	42000	4100	40	49	40	80	8	130	720	16000	
30/03/2012	2	2	5	780	27100	37300	610	2	73	22	77	7.9	51	160	12000	0.1
3/05/2013	5	5	1	20	8130	8980	1100	1	2	2	2	8.4	62	140	15000	5

Date	Total Organic Carbon	Total Phosphorous	Total Aluminium	Total Arsenic	Total Barium	Total Cadmium	Total Calcium	Total Chromium	Total Cobalt	Total Copper	Total Iron	Total Lead	Total Magnesium	Total Manganese	Total Mercury	Total Phenols	Total Sodium	Total Zinc
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17/03/2011	5900	23	35	0.29	0.41	0.016	370	2.9	0.4	0.46	140	0.25	930	3.7	0.0092	0.88	11400	20
30/03/2012	3100	2.34	3.5	0.217	0.16	0.016	110	0.41	0.061	0.25	31	0.063	360	1	0.001	2.34	2300	6.8
3/05/2013	3400	4.3	1.4	0.17	0.092	0.0028	41	0.1	0.043	0.033	N/A	0.0044	490	0.075	0.0005	2.71	2300	0.56

APPENDICES

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APPENDIX 1 – SITE LOCATION PLAN

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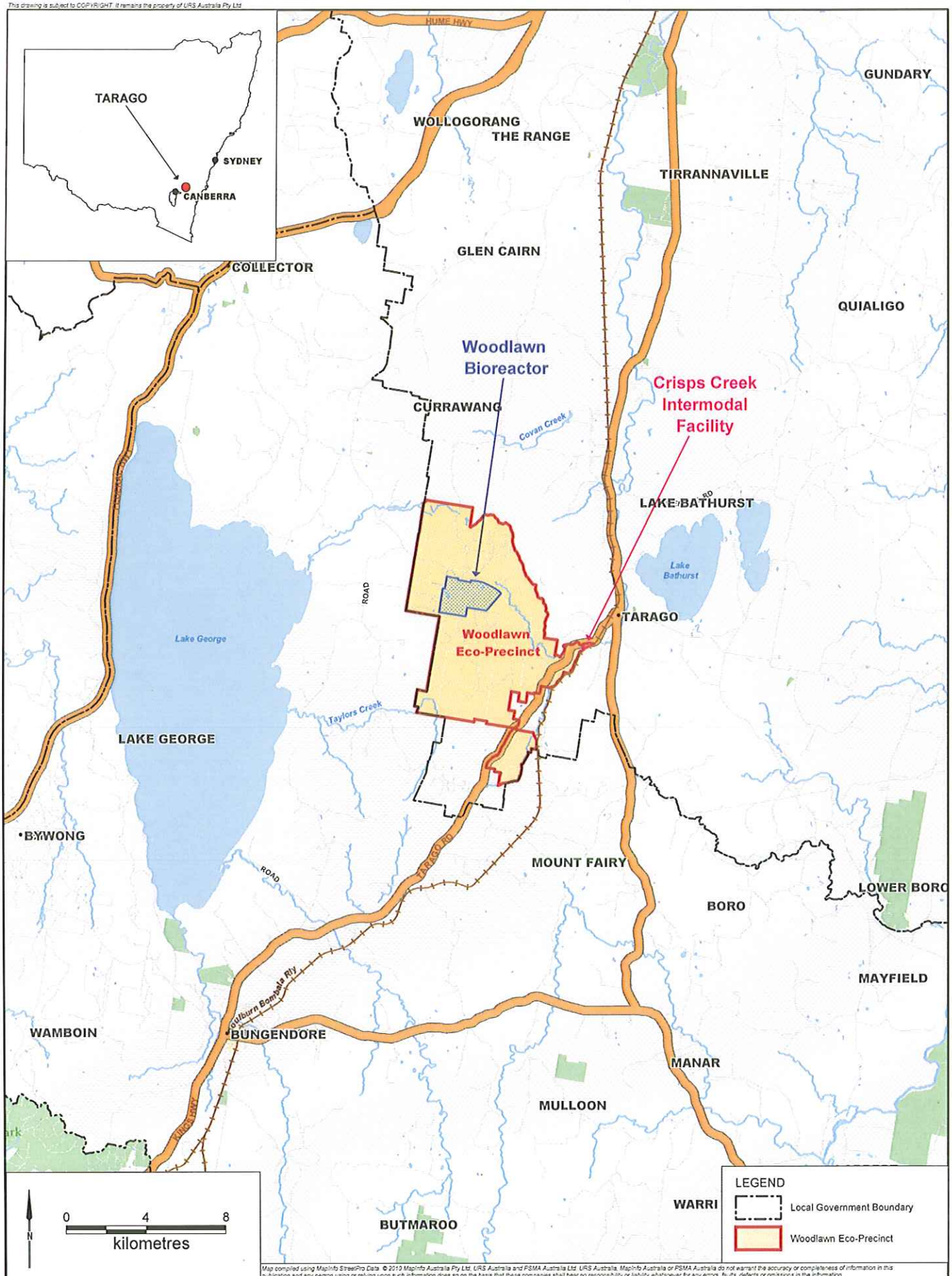

Client	Project	Title
VEOLIA ENVIRONMENTAL SERVICES PTY LTD	WOODLAWN EXPANSION PROJECT	WOODLAWN ECO-PRECINCT LOCATION

URS

Drawn: SB	Approved: LO	Date: 06/08/2010
Job No: 43177703	File No: 43177703.018.wor	

Figure: 1.1

APPENDIX 2 – EPL BOUNDARY

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North

EVAPORATION DAM 2

EVAPORATION DAM 1

Lot 30 DP 754919

Lot 25 DP 754919

EVAPORATION DAM 3

EVAPORATION DAM 3

3

WEST RIDGE

5

OFFICE AREA

4

PLANT COLLECTION DAM

DISUSED PLANT AREA

1

HICKORY'S PADDOCK

RAW WATER DAM

DOLORITE STOCKPILE

2

Lot 91 DP 754919

Lot 88 DP 754919

MINE VOID

Lot 19 DP 827588

LAKE GEORGE CATCHMENT

WASTE ROCK DAM

REHABILITATED WASTE DUMP

WOLLONDILLY CATCHMENT

NORTH TAILINGS DAM

WEST TAILINGS DAM

SOUTH TAILINGS DAM

LAKE GEORGE CATCHMENT

AREA SOURCE - WOODWARD-CLYDE DRAWING A8602362/0600

PROJECT AREAS

1 - ACCESS ROAD
2 - MINE VOID
3 - EVAPORATION DAM
4 - OFFICES, WORKSHOP, POWER GENERATING INFRASTRUCTURE
5 - PIPELINE

Cad ref: J:\MMPL\10407001\Cad\LEMP\LEMP-10407001-560.dwg

Last modified: 23 Jun 04 - 15:00

REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
A	SGG	23.6.04		

Before commencing work, all controlling dimensions on the drawings must be verified on the site, particularly those relative to property allgnments, other structures, and services.

Figured dimensions take preference over scaled. If in doubt, ask.

SCALES

0 100 200 300 400m

1 : 1500 at A3

THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE MAUNSELL AUSTRALIA QUALITY ASSURANCE SYSTEM CERTIFIED TO AS/NZS ISO 9001-1994

	PREPARED	CHECKED	
DESIGN			PASSED
DRAFTING	PM		DATE

maunsell

Maunsell Australia Pty Ltd A.B.N. 20 093 846 925
An AECOM company

WOODLAWN BIOREACTOR

WOODLAWN MINE SITE

LICENCED PREMISES

10407001-560 | A

APPENDIX 3 – CLAY LINING PLAN

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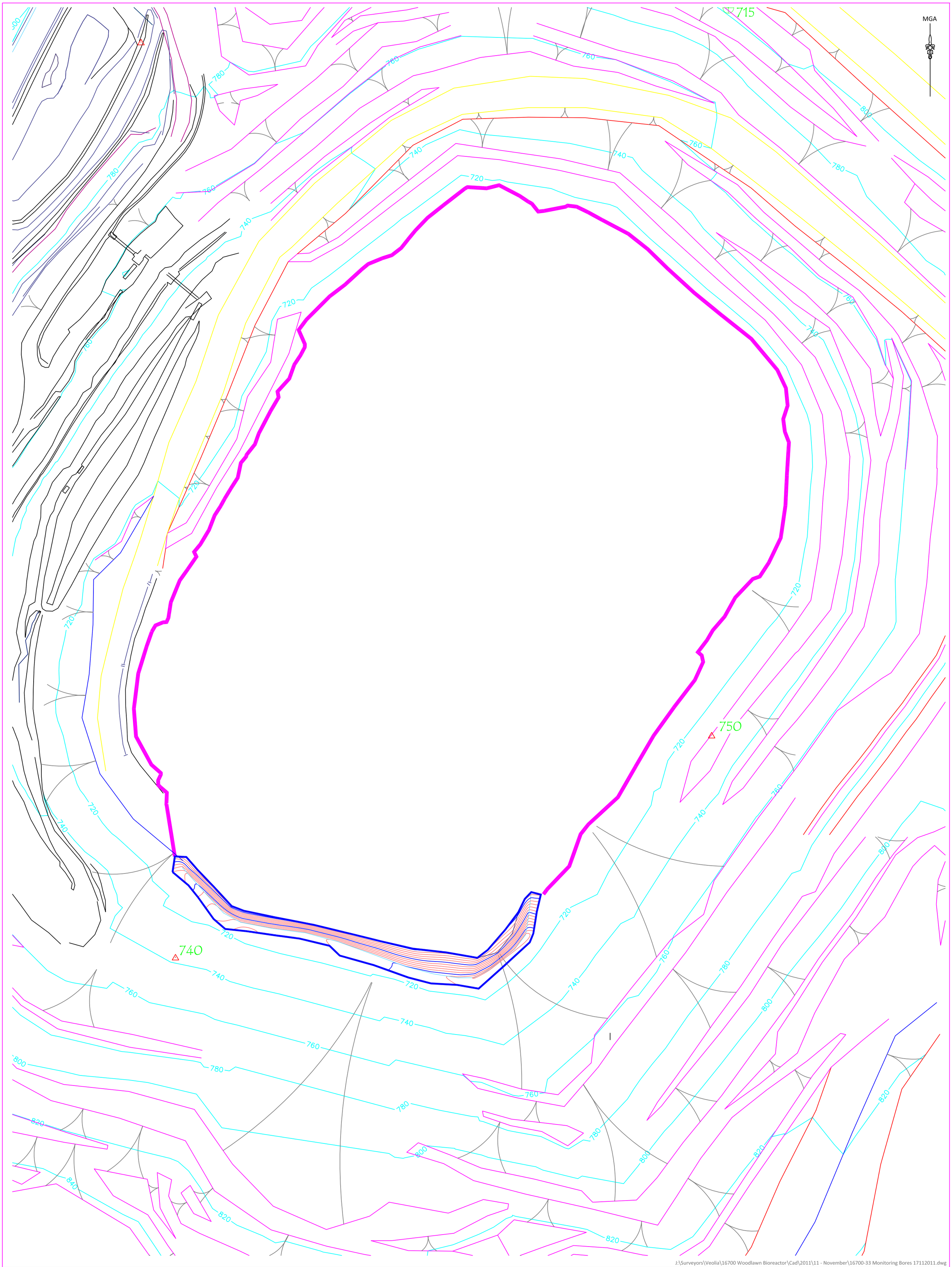

ISSUE	AMENDMENT	DATE
A	INITIAL ISSUE	29/10/2012

SCALE 1:1250

0 15 30 45 60 75

Metres

Liability limited by a scheme approved under Professional Standards Legislation.

A2 SHEET

VEOLIA ENVIRONMENTAL SERVICES

LandTeam Australia Pty Ltd
ABN 35 300 283 502
Goulburn Office
36 Montague Street
Postal: PO Box 1040
GOULBURN NSW 2580
p: (02) 4821 1033
f: (02) 4821 7238
e: goulburn@landteam.com.au

VEOLIA ENVIRONMENTAL SERVICES

WOODLAWN BIOREACTOR
CLAY LINING LOCATION
OCTOBER 2012

DATUM: AHD | ORIGIN: PILLAR 713 | CONTOUR INTERVAL: 20m

DATE: 29/10/2012
SURVEYED: S McD
DRAWN: S McD
CHECKED: MK
ISSUE A

DRAWING No.

16700-60

J:\Surveyors\Veolia\16700 Woodlawn Bioreactor\Cad\2011\11 - November\16700-33 Monitoring Bores 17112011.dwg

APPENDIX 4 – CLYDE WASTE SCREENING PROCEDURE

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NSW Resource Recovery Screening & Recording of Waste Procedure

Aim and Scope

This procedure covers the waste screening and recording requirements at the NSW Resource Recovery Facilities. These facilities each have Environment Protection Licenses which need to be complied with when receiving waste at the facilities. Whilst the types of waste accepted at each of these facilities can vary, the process for screening and recording waste are substantially the same.

Acts, Regulations, Codes of Practice and Australian Standards

Protection of the Environment Operations Act 1997

Accountabilities and Responsibilities

The Operations Manager is accountable for ensuring that this procedure is implemented onsite.

All workers onsite are responsible with following this procedure. All customers are also responsible in following these procedures where they apply to the transport and tipping of their waste.

Procedure

Site inductions and Customer Contracts

There are three types of customers that will tip waste at NSW Resource Recovery facilities:

1. Internal Customers (VES NSW)
2. External Account Customers
3. one-off COD customers (where applicable)

All account customer's waste taken directly to site needs to be preapproved by the NSW Resource Recovery Sales Team or Site Management to ensure that it meets the site Environment Protection License requirements. Sites have induction materials available for all drivers coming onsite, including pamphlets and videos. Inductions include the site safety requirements as well as the environmental requirements, including waste types permitted by the Environment Protection License.

Waste Screening and Inspection

There are two main screening points when waste is delivered to the site:

- At the Weighbridge, site staff confirm the source of the waste material and provide access to the site, before allowing vehicle to proceed to the tipping facility. All details of the waste accepted onto site are recorded.
- At the Tipping area, Site staff inspection of waste as it is discharged from vehicle at the tipping area, to check for non-conforming waste. Site operators are trained to recognise wastes that are not to be accepted at the site. If the site operator sees a non-conforming waste, the truck driver will be informed and asked to wait. The site manager will be immediately informed who will arrange for the customer to be notified.

Where a non-conforming waste is identified, if appropriate, the site operator will isolate the load, either by leaving it or by moving it to a separate place so as not to cause hazard or disruption to others. The operator should follow the Procedure for Waste Rejection.

Should there be any reason to not permit the load onto the site, the customer will be informed and a record of waste rejected will be kept. The Procedure for Waste Rejection will be followed.

Inspection at Unloading Point

If the operator is in any doubt as to the contents of the load, the load will be left in place and the Site Manager consulted. If possible, the driver will be asked to provide any further information on the contents. In the event that part or the entire load is to be rejected, Procedure for Waste Rejection will be followed.

Recording of Waste

The customer details are verified on PWS. If there are any concerns or queries, the site manager will be contacted and the driver's office may be contacted.

Once VES staff are satisfied that the waste is acceptable, the following details are recorded on PWS:

- Date
- Time
- Vehicle Registration
- Customer
- Gross weight
- Waste type

Once the load has been tipped the vehicle will proceed to the weighbridge and a tare weight will be recorded. A transaction docket will be produced confirming the key details above, and the weighbridge operator will obtain the driver's signature (where applicable) to confirm the details. A copy will be given to the driver.

Procedure for Waste Rejection

If a load of waste is rejected at the facility, one of the following processes will take place:

1. If it can be loaded easily and safely, the load will be reloaded into the same vehicle to allow the driver to dispose of the waste material at another facility.
2. If it cannot be reloaded into the same vehicle, the waste will be segregated and reloaded into a suitable vehicle.

Any costs associated with Waste rejection will be borne by the customer.

End of Procedure

APPENDIX 5 – MONITORING LOCATIONS PLAN

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MINE GRID

Rev.	Description	By	Date
A	Site monitoring locations	B.R.	12/10/07

Kells Land Development Solutions
GOULBURN
36 Montague Street
PO Box 1040
GOULBURN NSW 2580
Ph: (02) 4821 1033
Fax: (02) 4821 7238
BRAIDWOOD
5 Village Terrace
Lascelles Street
BRAIDWOOD NSW 2622
Ph: (02) 4842 2466
Fax: (02) 4842 2594
Email: office@kellssurveyors.com.au

SCALE 1:12,500 (AT A1)

0 250 500 750 1000 1250
Metres

SURVEY	B.R
DESIGN	VEOLIA
DRAWN	B.R.
CHECKED	VEOLIA
APPROVED	VEOLIA

VEOLIA ENVIRONMENTAL SERVICES

WOODLAWN BIOREACTOR
SITE MONITORING
LOCATIONS

DATUM: AHD
ORIGIN OF LEVELS:
DRAWING No. 16800 - 220/1
REV. A

APPENDIX 6 – MB19 AND MB20 MONITORING RESULTS

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Appendix 8 - MB19 & MB20

Field Information / **Analytical Information**

Statistics	Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level
			AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL
	29/09/2011	MB19	10.21	TH	6.6	12340	12.90	3.41		1.59	775.93
	10/01/2012	MB19	9.52	TH	6.68	6250	14.80	3.24		1.98	775.54
	29/03/2012	MB19	14.35	TH	6.53	7000	16.20	3.05		0	777.52
	14/06/2012	MB19	12.13	TH	6.27	6190	13.7	3.15		0.15	777.37
2011/12 Minimum					6.27	6190	12.9	3.05	0	0	775.54
Maximum					6.68	12340	16.2	3.41	0	1.98	777.52
Average					6.52	7945	14.4	3.2125	#DIV/0!	0.93	776.59
StdDev					0.177576	2953.083	1.430618	0.152834	#DIV/0!	1.001898	1.001898
Count					4	4	4	4	0	4	4

Statistics	Date	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
			mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
	29/09/2011	856091	506	0.1	506	0.1	820	6300	740	470	2.2	210	6.7	2500	5700
	10/01/2012														
	29/03/2012	882489	476	0.1	476	0.1	700	6900	770	580	2.2	330	6.5	3700	7100
	14/06/2012														
2011/12 Minimum			476	0.1	476	0.1	700	6300	740	470	2.2	210	6.5	2500	5700
Maximum			506	0.1	506	0.1	820	6900	770	580	2.2	330	6.7	3700	7100
Average			491	0.1	491	0.1	760	6600	755	525	2.2	270	6.6	3100	6400
StdDev			21.2132	0	21.2132	0	84.85281	424.2641	21.2132	77.78175	0	84.85281	0.141421	848.5281	989.9495
Count			2	2	2	2	2	2	2	2	2	2	2	2	2

Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	29/09/2011						0.032	0.00011			1.1			
	10/01/2012													
	29/03/2012	0.01	0.08	0.004	0.00068	0.0059	0.0074	0.0021	2.3	0.0001	0.35	0.1	1.2	0.01
	14/06/2012													
2011/12 Minimum		0.01	0.08	0.004	0.00068	0.0059	0.0074	0.00011	2.3	0.0001	0.35	0.1	1.2	0.01
Maximum		0.01	0.08	0.004	0.00068	0.0059	0.032	0.0021	2.3	0.0001	1.1	0.1	1.2	0.01
Average		0.01	0.08	0.004	0.00068	0.0059	0.0197	0.001105	2.3	0.0001	0.725	0.1	1.2	0.01
StdDev		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.017395	0.001407	#DIV/0!	#DIV/0!	0.53033	#DIV/0!	#DIV/0!	#DIV/0!
Count		1	1	1	1	1	2	2	1	1	2	1	1	1

Statistics	Date	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
		mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
	29/09/2011															
	10/01/2012															
	29/03/2012	0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	11	0.03	0.007
	14/06/2012															
2011/12 Minimum		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	11	0.03	0.007
Maximum		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	11	0.03	0.007
Average		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	11	0.03	0.007
StdDev		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Count		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

T-8.18 - Groundwater Results - Monitoring Bore 20

Field Information / **Analytical Information**

Statistics	Date	Site Code	Time	Sampler	pH	Conductivity	Temperature	Dissolved Oxygen	Oxidation-Reduction Potential	Depth to Water	RL Water Level
			AM/PM	Initials	pH	µS/cm	°C	mg/L	mV	m	m RL
	29/09/2011	MB20	10.08	TH	6.18	12360	12.6	4.19		2.06	775.96
	10/01/2012	MB20	9.44	TH	6.76	5720	14.2	2.53		2.48	775.54
	29/03/2012	MB20	14.19	TH	6.49	5510	16.1	3.74		0.42	777.60
	14/06/2012	MB20	12.18	TH	6.52	5240	13.8	4.29		0.9	777.12
2011/12 Minimum					6.18	5240	12.6	2.53	0	0.42	775.54
Maximum					6.76	12360	16.1	4.29	0	2.48	777.6
Average					6.4875	7207.5	14.175	3.6875	#DIV/0!	1.465	776.555
StdDev					0.23796	3440.614	1.452297	0.807893	#DIV/0!	0.965315	0.965315
Count					4	4	4	4	0	4	4

Statistics	Date	Laboratory Sample Code	Bicarbonate	Carbonate	Alkalinity (as CaCO3)	Nitrogen (ammonia)	Chloride	Conductivity	Dissolved Calcium	Dissolved Magnesium	Dissolved Potassium	Dissolved Sodium	pH	Sulphate	Total Dissolved Solids
			mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L
	29/09/2011	856092	530	0.1	530	0.1	670	6100	690	480	1.6	260	6.7	1900	5500
	10/01/2012														
	29/03/2012	882490	373	0.1	373	0.1	500	5700	580	480	1.9	250	6.6	2900	5700
	14/06/2012														
2011/12 Minimum			373	0.1	373	0.1	500	5700	580	480	1.6	250	6.6	1900	5500
Maximum			530	0.1	530	0.1	670	6100	690	480	1.9	260	6.7	2900	5700
Average			451.5	0.1	451.5	0.1	585	5900	635	480	1.75	255	6.65	2400	5600
StdDev			111.0158	0	111.0158	0	120.2082	282.8427	77.78175	0	0.212132	7.071068	0.070711	707.1068	141.4214
Count			2	2	2	2	2	2	2	2	2	2	2	2	2

Statistics	Date	Chromium (Hex)	Dissolved Aluminium	Dissolved Arsenic	Dissolved Cadmium	Dissolved Cobalt	Dissolved Copper	Dissolved Lead	Dissolved Manganese	Dissolved Mercury	Dissolved Zinc	Fluoride	Nitrate	Nitrite
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	29/09/2011						0.056	0.0013			1.7			
	10/01/2012													
	29/03/2012	0.01	0.1	0.004	0.0071	0.0092	0.017	0.0048	0.92	0.0001	1.2	2.1	0.02	0.2
	14/06/2012													
2011/12 Minimum		0.01	0.1	0.004	0.0071	0.0092	0.017	0.0013	0.92	0.0001	1.2	2.1	0.02	0.2
Maximum		0.01	0.1	0.004	0.0071	0.0092	0.056	0.0048	0.92	0.0001	1.7	2.1	0.02	0.2
Average		0.01	0.1	0.004	0.0071	0.0092	0.0365	0.00305	0.92	0.0001	1.45	2.1	0.02	0.2
StdDev		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.027577	0.002475	#DIV/0!	#DIV/0!	0.353553	#DIV/0!	#DIV/0!	#DIV/0!
Count		1	1	1	1	1	2	2	1	1	2	1	1	1

Statistics	Date	Organo-chlorine pesticides	Organo-phosphate pesticides	Polycyclic Aromatic Hydrocarbons	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	Benzene	Toluene	Ethyl Benzene	Xylene	Total Phenols	Total Organic Carbon	Total Barium	Total Chromium
		mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
	29/09/2011															
	10/01/2012															
	29/03/2012	0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	8	0.013	0.001
	14/06/2012															
2011/12 Minimum		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	8	0.013	0.001
Maximum		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	8	0.013	0.001
Average		0.002	0.002	0.5	20	50	100	50	1	5	2	2	0.001	8	0.013	0.001
StdDev		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Count		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

'<' removed from <LOR values