GROUNDWORK plus

RALSTON QUARRY
SURFACE WATER ASSESSMENT

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1. Introduction

1.1 Project Overview

Groundwork Plus Pty Ltd ('Groundwork Plus') has been commissioned by Quarry Solutions Pty Ltd (the client) to prepare a Surface Water Assessment (SWA) for the proposed Ralston Quarry (the site) as part of the Environmental Impact Statement (EIS) for the development application.

1.2 Scope of Assessment

This SWA includes the following scope in order to adequately address the requirements of the EIS for the proposed quarry development:

- a detailed site water balance and an assessment of any volumetric water licensing requirements, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures;
- identification of any licensing requirements or other approvals required under the Water Act 1912 and/or Water Management Act 2000;
- demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP);
- a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant Water Sharing Plan or water source embargo;
- an assessment of activities that could cause erosion or sedimentation issues, and the proposed measures to prevent or control these impacts;
- an assessment of any likely flooding impacts of the development;
- an assessment of potential impacts on the quality and quantity of existing surface and ground water resources, including a detailed assessment of proposed water discharge quantities and quality against receiving water quality and flow objectives; and
- a detailed description of the proposed water management system, water monitoring program and other measures to mitigate surface and groundwater impacts;

1.3 Site Location

The site is located on 4948 Tooraweenah Road, Mount Tenandra, New South Wales on land formally identified as Lot 82 on DP820705. The site is presently used for agricultural purposes. The proposed Ralston Quarry will supply material to a section of the Inland Rail Project which is situated in proximity to the site.

2. Erosion and Sediment Control Management

2.1 Site Topography

The proposed quarry is situated over the ridgeline as shown on **Figure 1 – Stormwater Management Plan**. The proposed stage 1 extraction area will extract from a natural ground level of around RL 285m AHD to a proposed pit flor of RL 281m AHD. The upper northern reaches of the quarry in proposed stage 2 are situated at RL 320m AHD, with the extraction proposed to reach approximately RL 290m AHD.

2.2 Proposed Erosion and Sediment Controls

It is proposed to manage the disturbed quarry area by diverting all surface water to a sediment basin within each stage of quarry development as shown on **Figure 1 – Stormwater Management Plan**.

2.2.1 Sediment Basin Sizing Calculations

In order to meet the requirements of the EIS, the sediment basins are proposed to be designed, constructed and operated to retain the disturbed area runoff at the site in accordance with DECC (2008) *Managing Urban Stormwater - Soils and Construction (Volume 2E).*

As outlined in DECC (2008), the total upper settling storage requirements for sediment basins are calculated based on the following formula:

$V_s = 10 * R_{Y\%, 5\text{-day}} * C_v * A$, where:
A = Catchment Area (m^2)
C_v = Coefficient of Discharge
$R_{Y\%, 5\text{-day}}$ = 5 day rainfall depth (m) not exceeded for Y percent of rainfall events

In addition to the upper settling volume, a sediment storage zone is required to be accommodated based on a 2 month soil volume loss using the Revised Universal Soil Loss Equation (RUSLE):

$V_{SED} = [0.17 \times A (R . K . LS \times 1.3 \times 1.0)] / 1.3$
A = Disturbed Catchment Area (m^2)
R, LS and K = RUSLE factors as per DECC

Table 1 – Sediment Basin Storage Requirements details the upper settling, sediment storage and subsequent total sediment basin storage requirements for the site, for capture of a 50.7 mm rainfall event (Dubbo data used as nearest reference location), deemed the 5-day 90th percentile as per DECC 2008. Detailed calculations are included in **Attachment 1 – Sediment Basin Calculations.**

Table 1 – Sediment Basin Storage Requirements

Basin ID	Catchment area (ha)	Upper Settling Req'd Volume (ML)	Sediment Storage Req'd Volume (ML)	Total Required Volume (ML)	Proposed Volume (ML)
SB1	18.53	7.05	3.52	10.57	10.57
SB2	7.65	2.91	1.45	4.36	4.36

Based on the above, the total required sediment basin volumes are considered appropriate for erosion and sediment control management.

3. Water Balance Assessment

3.1 Water Supply and Storage Infrastructure

The quarry proposes to harvest surface water for reuse in operations through construction of the sediment basins as shown in on **Figure 1 – Stormwater Management Plan.** The sediment basins are proposed to be used for the treatment of surface water as discussed in **Section 2 - Erosion and Sediment Control Management**, and also for reuse into quarry operations.

3.2 Rainfall Data

Rainfall data was sourced from the Bureau of Meteorology (BoM) for Warrumbungle (51088) for the water balance, which is 10km from the site. To inform the calculations of the water balance daily rainfall records were downloaded and used for the for a higher degree of accuracy.

3.2.1 Scenario 1 – Average Rainfall

The year 2012 was selected as the baseline as it has 100% data available for the year and received an annual rainfall depth of 552m which is approximately equal to the average (597mm).

3.2.2 Scenario 2 – Below Average Rainfall

A second water balance scenario was selected against the 2013 rainfall data, as it was a drier year at around 425mm (below the average 597mm).

3.3 Mean Daily Evaporation

Mean Daily Evaporation data was sourced from BoM for Trangie Research Station AWS (051049) as it was the closest available (50km away), and is shown below in **Table 2 – Mean Daily Evaporation.**

Table 2 – Mean Daily Evaporation

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
mm	9.8	8.8	6.9	4.6	2.6	1.8	1.8	2.7	4	6	8.1	9.7

3.4 Daily Groundwater Inflow

As discussed in the EIS, there is no anticipated interception with the groundwater table, therefore groundwater flows are not considered in the water balance assessment.

3.5 Catchment Hydrology

The water balance assessment was estimated based on the hydrological parameters shown below in **Table 3 – Hydrological Parameters**. The surface water parameters were based on the supplied LiDAR survey.

Table 3 – Hydrological Parameters

Parameter	Value	Unit
Total Catchment Area	261,800	m²
Starting Pond Volume	4,000	m³
Total Sediment Basin capacity	14,930	m³
Runoff Coefficient (average)	0.60	n/a
Assumed Daily Usage in Quarry	150	kL

3.6 Water Balance Assessment Results

Refer to **Attachment 2 – Water Balance Assessment** for a comprehensive daily breakdown of the water balance assessment. A summary of the results are shown for each scenario in the tables below.

Table 4 – Water Balance Assessment Results (Average Rainfall)

Inputs	Overland Flow into Sediment Basins	86.7	Values are in ML/year
Total water inputs		**86.7**	
Outputs	Evaporation from Dams	9.2	
	Total water required for processing *(includes dust suppression and operations)*	54.7	
Total water outputs		**63.9**	
Estimated Water Surplus		**22.8**	

Table 5 – Water Balance Assessment Results (Below Average Rainfall)

Inputs	Overland Flow into Sediment Basins	66.8	Values are in ML/year
Total water inputs		**66.8**	
Outputs	Evaporation from Dams	9.2	
	Total water required for processing *(includes dust suppression and operations)*	54.7	
Total water outputs		**63.9**	
Estimated Water Surplus		**2.9**	

3.7 Volumetric Water Licensing Requirements

It is expected that the quarry will be self-sufficient with respect to surface water usage when developed to extents shown in **Figure 1 – Stormwater Management Plan**.

However if external water supply is required, it will be sourced from external licensed water suppliers to meet the anticipated shortfalls for quarry operations. As outlined in the water balance assessment results, up to 22.8ML per annum surplus is expected in an average year, and around 2.9ML per annum surplus is expected in a below average year.

The quarry will be responsible to ensure that any licensing requirements and other approvals required under the Water Act 1912 and/or Water Management Act 2000 are obtained.

It is expected that the quarry will be self-sufficient in water supply, hence construction and operation of the development can be undertaken with any additional water requirements being reasonably obtained from an appropriately authorised and reliable licensed water supplier.

3.8 Water Disposal Methods

As demonstrated in **Attachment 2 – Water Balance Assessment**, there are 17 days per annum expected where water will be discharged due to the sediment basin and/or clean water dam exceeding capacity in the above average rainfall scenario, and 11 days per annum expected in the below average rainfall scenario.

The sediment basin will capture and treat stormwater prior to discharge in all cases, and the quarry will operate in accordance with the proposed operational management measures as outlined in **Section 4 – Operational Management Plan.**

4. Operational Management Plan

Provided below is the proposed Stormwater Operational Management Plan for implementation across the site.

4.1 Stormwater Management Plan

Purpose

Extraction and associated quarry operations that have the potential to impact on surface water runoff include:

- Vegetation clearing
- Topsoil stripping
- Overburden removals
- Excavation pit development
- Construction and maintenance of internal roads and hardstands
- Stockpiling of topsoil, raw feed and product
- Spillage during handling of materials
- Use and storage of oils, greases, fuels and other chemicals
- Accidental spillage of fuels, lubricants, or chemicals.

Performance Targets

It is proposed the quarry adhere to the extractive industry targets shown below for water quality release limits.

Proposed Water Quality Parameters

Parameter	100 percentile concentration limit
pH	6.5 – 8.5
Total Suspended Soils (TSS)	50 mg/L

Responsibilities

The Quarry Manager, or delegate, will be primarily responsible for the implementation of this plan.

Strategies/mitigation measures:

Strategies/mitigation measures for the management of surface water runoff and erosion and sediment transport from the site will be implemented in accordance the relevant approval conditions. Erosion and Sediment Control (ESC) measures for the site have been provided below for each main consideration when discussing ESC / Stormwater Management.

Erosion and Sediment Control

Site Management

Land-disturbing activities must be undertaken in such a manner that allows all reasonable and practicable measures to be undertaken to:

- Allow stormwater to pass through the Site in a controlled manner and at non-erosive flow velocities up to the specified design storm discharge.
- Minimise soil erosion resulting from rain, water flow and/or wind.
- Minimise adverse effects of sediment runoff, including safety issues.
- Prevent, or at least minimise, environmental harm resulting from work-related soil erosion and sediment runoff.
- Ensure that the use of land/properties adjacent to the development (including roads) are not diminished as a result of the adopted ESC measures.
- Refuelling areas will be appropriately bunded and established away from sediment basins and associated drainage systems.

4.1 Stormwater Management Plan

Land Clearing

- Land clearing must be delayed as long as practicable and must be undertaken in conjunction with development of each stage of the quarry.
- Bulk tree clearing must occur in a manner that minimises disturbance to existing ground cover (organic or inorganic).
- Disturbance to natural watercourses (including bed and banks) and their associated riparian zones must be limited to the minimum practicable extent and be accompanied by the relevant approval.
- No land clearing shall be undertaken unless preceded by the installation of adequate drainage and sediment control measures, unless such clearing is required for the purpose of installing such measures, in which case, only the minimum clearing required to install such measures shall occur.
- Prior to land clearing, areas of protected vegetation, and significant areas of retained vegetation must be clearly identified (e.g. with high-visibility tape, or light fencing) for the purposes of minimising the risk of unnecessary land clearing.
- All reasonable and practicable measures must be taken to minimise the removal of, or disturbance to, those trees, shrubs and ground covers (organic or inorganic) that are intended to be retained.
- All land clearing must be undertaken in accordance with the Federal, State and Local Government Vegetation Protection/Preservation requirements and/or policies.
- Land clearing is limited to the minimum practicable extent during those periods when soil erosion due to wind, rain or surface water is possible.

Site Access

- Site exit points must be appropriately managed to minimise the risk of sediment being tracked onto sealed, public roadways.
- Stormwater runoff from access roads and stabilised entry/exit points must drain to an appropriate sediment control device.

Topsoil Management

- All reasonable and practicable measures must be taken to obtain the maximum benefit from existing topsoil.
- The top 100 mm of in-situ soils is to be stripped and stockpiled separately to subsoil materials for use in rehabilitation.

Stockpile Management

Stockpiles of erodible material that has the potential to cause environmental harm if displaced, must be:

- Adequately protected from wind, rain, concentrated surface flow and excessive upslope stormwater surface flows.
- Located at least 5 m from any hazardous area, retained vegetation or concentrated drainage line.
- Located up-slope of an appropriate sediment control system.
- A suitable flow diversion system must be established immediately up-slope of a stockpile.

Drainage Control

- Wherever reasonable and practicable, stormwater runoff entering the Site from external areas, and non-sediment laden (clean) stormwater runoff entering a work area or area of soil disturbance, must be diverted around or through that area in a

4.1 Stormwater Management Plan

manner that minimises soil erosion and the contamination of that water for all discharges up to the specified design storm discharge.

- All reasonable and practicable measures must be implemented to control flow velocities in such a manner than prevents soil erosion along drainage paths and at the entrance and exit
- Wherever reasonable and practicable, "clean" surface waters must be diverted away from sediment control devices and any untreated, sediment-laden waters.
- The internal drainage channel shall be constructed with silt traps. Such silt traps shall be cleared at regular intervals.
- Quarry and working benches shall be drained to the central drainage channel via channelling which shall have rubble placed in them to minimise the speed of water flow.

Sediment Control

- Efforts shall be employed to trap sediment within the Site, and as close as practicable to its source.
- Sediment traps must be installed and operated to both collect and retain sediment.
- The potential safety risk of proposed sediment control devices to Site workers, visitors and the public must be given appropriate consideration, especially those devices located within commonly accessible areas.
- All reasonable and practicable measures must be taken to prevent, or at least minimise, the release of sediment from the Site.
- Suitable all-weather maintenance access must be provided to all sediment control devices.
- Sediment control devices must be de-silted and made fully operational as soon as reasonable and practicable after a sediment-producing event, whether natural or artificial.
- Materials, whether liquid or solid, removed from sediment control devices during maintenance or decommissioning, must be disposed of in a manner that does not cause ongoing soil erosion or environmental harm.

Site Maintenance

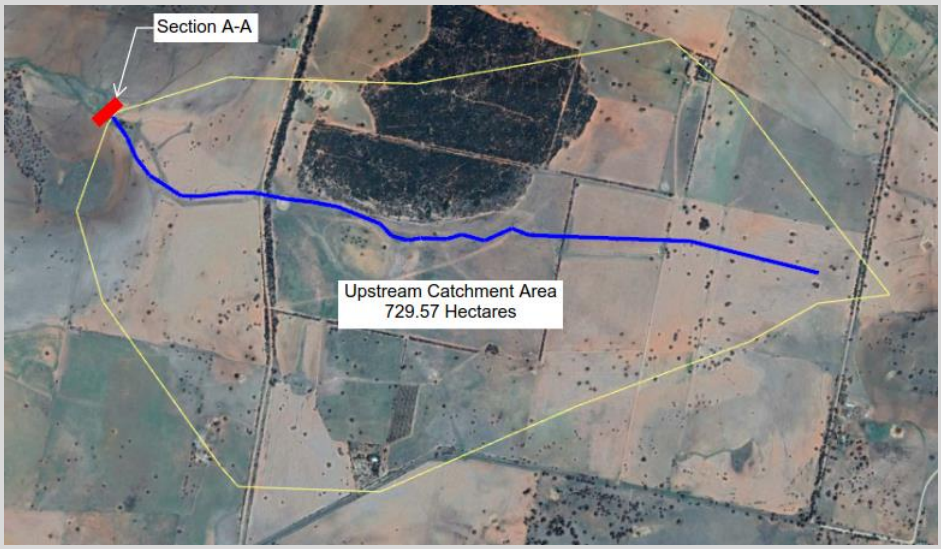
- All erosion and sediment control measures, including drainage control measures, must be maintained in proper working order at all times during their operational lives.
- Washing/flushing of sealed roadways must only occur where sweeping has failed to remove sufficient sediment and there is a compelling need to remove the remaining sediment (e.g. for safety reasons). In such circumstances, all reasonable and practicable sediment control measures must be used to prevent, or at least minimise, the release of sediment into receiving waters. Only those measures that will not cause safety and property flooding issues shall be employed. Sediment removed from roadways must be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.
- Sediment removed from sediment traps and places of sediment deposition must be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.
- Maintenance mowing must be done in a manner that will not damage the profile of formed, soft edges, such as the crest of earth embankments.

4.1 Stormwater Management Plan

Flooding

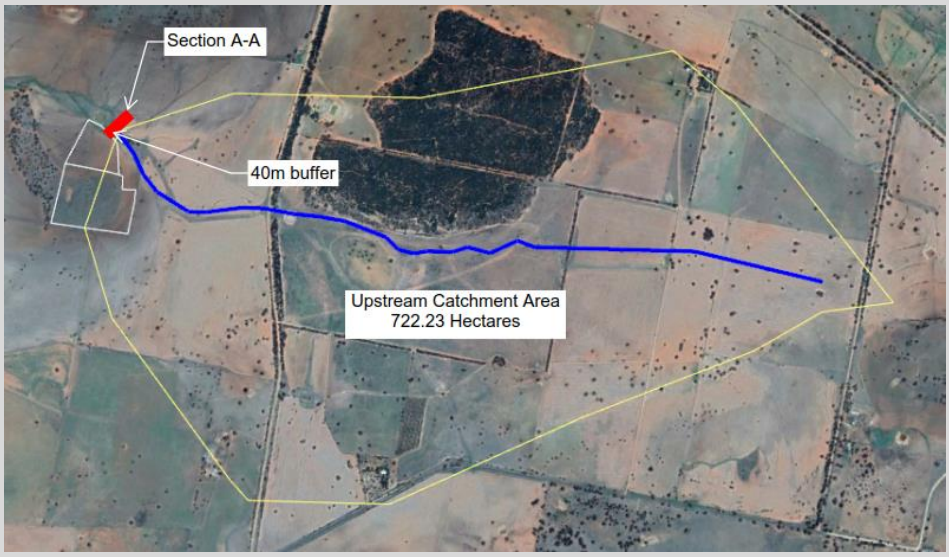
The quarry is not located in a defined floodplain and flood risk is assumed low. There is an existing watercourse with a catchment of approximately 729.57 Hectares upstream to the quarry site as shown in Diagram F1.

Diagram F1 – Upstream Catchment Details (Existing Scenario)



A bund will be constructed to delineate the quarry operations from the surrounding areas, including the existing watercourse. In addition to this, a 40m buffer is proposed from the creek line to exclude quarry development in proximity to the watercourse, as shown in Diagram F2.

Diagram F2 – Upstream Catchment Details (Developed Scenario)



In order to confirm non-worsening conditions, a 1D analysis was conducted using DRAINS (Watercom).

4.1 Stormwater Management Plan

The assumed input hydrology parameters in the DRAINS assessment include:

- Assumed creek depth minimum of 500mm
- Assumed creek bed width of 40m
- Watercourse upstream length – 4,528m
- Watercourse gradient (average) – 1.49%
- Watercourse Manning's roughness (n) – 0.035 (vegetation)

The input cross section for the existing case and developed case scenarios are shown below in Diagram F3 and F4 respectively.

Diagram F3 – Existing Creek Section A-A

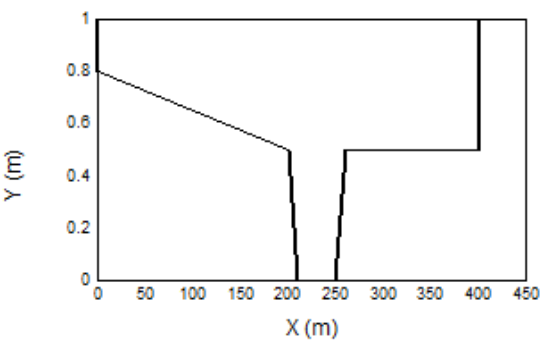
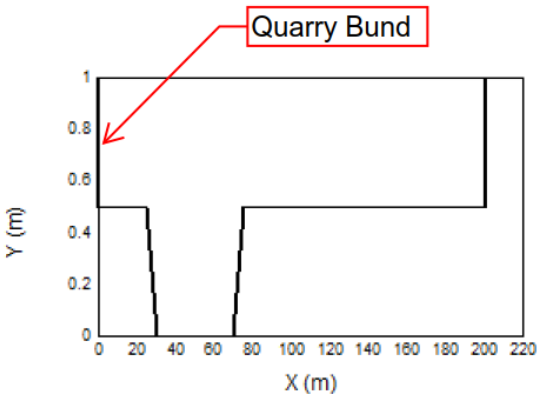


Diagram F4 – Developed Creek Section A-A

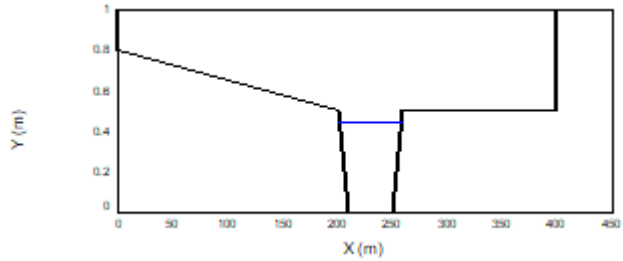


A simulation was run for a 100 year ARI, 1 hour duration event, and results are shown in Diagram F5 and F6 for the existing and developed case scenarios respectively.

The results indicate that the creek bed will contain the 100 year ARI event for each scenario, and hence the quarry development will not adversely impact in flooding upstream or downstream of the site.

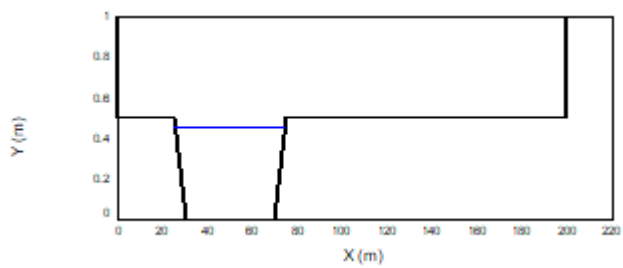
4.1 Stormwater Management Plan

Diagram F5 – Existing Creek Section A-A



(Q100, depth of water – 446mm; Q =32.45m³/s; V = 1.49m/s)

Diagram F6 – Developed Creek Section A-A



(Q100, depth of water – 443mm; Q =32.13m³/s; V = 1.49m/s)

Monitoring and Maintenance

A summary schedule of the various inspections, performance criteria and responses that shall be performed on Site is shown below.

Monitoring and Maintenance of Stormwater Control Devices

Inspection	Minimum Frequency	Performance Criteria	Response
Inspect drainage lines including catch drains, contour drains and diversions	Quarterly, and prior to and following rainfall events	• erosion in areas adjacent to water conveyancing structures	• eroded areas shall be rip rapped as soon as practicable
		• overtopping of water conveyancing structures (identified by the scouring of the drain batters perpendicular to the direction of flow)	• the drain shall be cleaned of sediments and rip rap replaced to the original design specifications • rehabilitation with grasses in the catchment of the drain may be required to reduce sediment loadings of runoff
Inspect potential sediment storage capacity of	Quarterly or following major rainfall events	• maintain storage capacity	• sediment/grit shall be removed from the structure and used as filling in rehabilitation works

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	grit traps, sediment traps and Water Storage Areas			• recycle excavation pit water to ensure that adequate free storage is maintained for the collection and holding of runoff
	Waste containers	Quarterly	• waste is stored in appropriate containers • waste receptacles labelled	• ensure waste material is stored and disposed of properly
	Spill response stations	Quarterly and following use	• equipment is properly maintained	• maintain equipment • replace used equipment
	Maintenance / refuelling area	Quarterly	• fuel, oil spills	• clean up fuel spills and investigate source
			• contractor maintenance	• maintain contractor maintenance records
			• fuel storage integrity maintained	• investigate and repair potential leaks
Auditing	Stormwater management reviews are required to be carried out on a periodic basis to assess the implementation of the management strategies.			
Identification of Incident or Failure	Non-compliance with agreed performance criteria will be identified by: • Build-up of sediment off the Site • Excessive sediment build-up on the Site • Excessive erosion on the Site • Release of quarry materials from the Site • Poor vegetation establishment • Poorly maintained, damaged or failed ESC devices • Uncontrolled release from site for events less than the design event • Non-compliant water quality being released from Site.			
Corrective Action	After any identification of incident or failure, the source/cause is to be immediately located and the following measures implemented: • Build-up of sediment off the Site – the material must be collected and disposed of in a manner that will not cause ongoing environmental nuisance or harm; then on-site ESC measures amended, where appropriate, to reduce the risk of further sedimentation. • Excessive sediment build-up on the Site – collect and dispose of material, then amend up-slope drainage and/or erosion control measures as appropriate to reduce further occurrence. • Severe or excessive rill erosion – investigate cause, control up-slope water movement, re-profile surface, cover dispersive soils with a minimum 100mm layer of non-			

4.1 Stormwater Management Plan	
	dispersive soil, and stabilise with erosion control measures and vegetation as necessary. • Release of construction material from the Site – collected and disposed of in a manner that will not cause ongoing environmental nuisance or harm; then inspect litter and waste receptors. • Poor vegetation growth or soil coverage – plant new vegetation and/or mulch as required. • Sediment control failure – replace and monitor more frequently. Regular failures may mean that the sediment control location, alignment or installation may need to be amended. • Scour / erosion of Water Storage Area bunds will be required to be stabilised. If the release of excessive sediment and/or other materials off the Site occurs, or water quality monitoring indicates levels are not within the Water Quality Release, clean up deposition, and inspect all control measures. If monitored levels within any sediment basin does not conform to the release criteria for: • Suspended solids – flocculate and retest • pH – treat and retest.
Internal Reporting	A copy of all incidents and complaints will be stored at the Site within the incident and complaint register. All complaints and incidents must be recorded internally.

5. Surface Water Management Implementation

This plan will be reviewed periodically and will be updated as necessary to include revised quarry developmental layout plans, topographic plans and detailed designs and specifications of controls devices.

5.1 Monitoring Investigation Indicators

The following indicators are to be used to identify if the objectives of the plan are being met:

- Visible evidence of deterioration of baseline water quality of downstream watercourses that is directly attributable to the Site.
- Pollutant concentrations that exceed the water quality objectives.
- Visible significant erosion.
- Failure of control measures.

The triggering of an investigation indicator will require the following remedial actions:

- Locate the source of water quality deterioration.
- Prevent continuing deterioration with temporary controls.
- Repair existing controls, construct additional controls or modify procedures to prevent future deterioration in water quality.
- Review management plan and strategies in the event of significant deterioration in water quality.

5.2 Monitoring Management Measures

The following management measures will be implemented during facility operation:

- The **Quarry Manager** or authorised representative is to regularly inspect the stormwater management devices, particularly prior to forecasted wet weather and following major rainfall events to ensure that these devices are in good working order.
- The **Quarry Manager** or authorised representative is to ensure that drains and paved surfaces are kept free of wastes or other material, especially materials which may impact on runoff water quality.
- The **Quarry Manager** shall carry out general surveillance to qualitatively assess stormwater releases from Site during discharge events.

5.3 Auditing and Review

The effectiveness of the plan will be reviewed as necessary (e.g. following a change in Site operations) and at least once every three (3) years. The review shall take into account changes to Site activities, available surface water monitoring results, any complaints, pollution incidents and any corrective actions taken.

5.4 Reporting and Responsibility

- The **Quarry Manager** will be responsible for ensuring that stormwater devices constructed on the Site have adequate free water storage capacity.
- All complaints pertaining to water quality received will be recorded in the complaints register/log maintained on-site.
- The **Quarry Manager** or a suitably qualified consultant will prepare water monitoring records if and when required by the regulatory authority.
- Records, including results of any monitoring program undertaken on-site, complaints or incidents will be kept on-site for a minimum of five (5) years.

5.5 Identification of Incident or Failure

An incident or failure may include, but not be limited to:

- deterioration in surface water quality within waters discharged from Site
- receipt of a stormwater quality release complaint
- not maintaining on-site stormwater controls or treatment devices.

5.6 Corrective Action

If a discharge with significant variation in water quality occurs as a result of on-site operations, an investigation will be conducted and appropriate action taken to resolve the issue to the fullest practicable extent.

6. Conclusion

This assessment outlines the appropriate treatment measures and operational procedures to be adopted to integrate adequate stormwater management into daily operations and Site activity. Specifically, this document has prepared to ensure that appropriate measures have been developed to meet the requirements of the EIS for the development.

Operational procedures outlined in this SMP will assist to ensure compliance as a minimum standard.

7. Reference List

1. *International Erosion Control Association, Best Practice Erosion and Sediment Control: Book 2 and Book 4, 2008.*
2. DECC (2008) *Managing Urban Stormwater - Soils and Construction.*

figures

Environmental Exclusion Zone Points Setout

Point #	Easting	Northing
1	666,471.953	6,543,103.795
2	666,504.749	6,543,097.835
3	666,582.912	6,542,947.759
4	666,565.575	6,542,850.669
5	666,487.611	6,542,850.669
6	666,486.690	6,542,939.957
7	666,481.488	6,542,973.765
8	666,466.752	6,543,005.839
9	666,459.817	6,543,044.848
10	666,458.950	6,543,075.188

E 666500m
E 667000m
N 6544000m
N 6543500m
N 6543000m
N 6542500m
Bench RL 320m
Bench RL 305m
Proposed Pit Floor RL 290m
Catchment C2 7.65 Ha
Sediment Basin SB2
Upper Settling Volume = 2.91ML
Sediment Storage Volume 1.45ML
Total = 4.36ML
Proposed Processing, Stockpiling and Extraction Area (Stage 2)
82 DP820705
Sediment Basin SB1
Upper Settling Volume = 7.05ML
Sediment Storage Volume 3.52ML
Total = 10.57ML
40m
Catchment C1 18.53 Ha
Proposed Pit Floor RL 281m
79 DP754192
Proposed Extraction Area (Stage 1)

Legend:
- Cadastral Boundary
- Site Boundary
- Access Road
- Major Contour
- Minor Contour
- Environmental Exclusion Zone
- Waterway
- Disturbed Runoff
- Undisturbed Runoff

FILE NAME: F:\Jobs\2400\2418 Quarry Solutions Ralston Quarry\Drawings\Drawing\2418.DRG.007 R1 Surface Water Management Plan.dwg
JOB SUB #:
CREATED: 13 December 2019

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: Google Earth Image Capture 2018-Dec-01
Topography: DEM_LiDAR_1Sec SRTM_Extract 2019-Aug-02
Cadastre: NSW Spatial Information Website
Ecosystem:
Other:

PROJECT: Ralston Quarry
CLIENT: Quarry Solutions Pty Ltd
TITLE: Figure 1 - Stormwater Management Plan

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DATUM: HORIZONTAL / VERTICAL / ZONE MGA / AHD / 55

attachments

Attachment 1

Sediment Basin Calculations

Sediment Basin Storage Volume Estimation
BASIN ID: SB1 (Developed Case)

$V_s = 10 * R_{(Y\%,\ 5\text{-}day)} * Cv * A$

A = 18.530 ha

$$C_{V(composite)} = \frac{C_{V(pervious)} \cdot (A - A_{(imp.)}) + A_{(imp.)}}{A}$$ Equation 4.12 (QUDM)

$C_{v\ (pervious)}$ = 0.75 Source: (Table B7, BPESC, IECA)

$F_{(imp)}$ = Adopted effective fraction impervious

$A_{(imp)}$ = 0 ha

$C_{v\ (composite)}$ = 0.75

$R_{(Y\%,\ 5\text{-}day)}$ = 50.7 mm

V_s = 7,046 m^3

V_s = 7.05 ML

$V_{SED} = 0.5 * V_s$

V_{SED} = 3.52 ML

3523 m^3

R (Y%, 5-day) Estimation (Source: BPESC, IECA, 2009)		
Location:	Ralston Quarry (Dubbo Rainfall used)	
R(Y%)	90	
K1		
K2		
$I_{(1yr,\ 120hr)}$		
$R_{(Y\%,\ 5\text{-}day)}$ =		Equation B8
$R_{(Y\%,\ 5\text{-}day)}$ =		EPL
$R_{(Y\%,\ 5\text{-}day)}$ =	50.7	Adopted

Sediment Basin Requires a Upper Settling Volume of	**7.05**	**ML**
Sediment Basin Requires a Sediment Storage Volume of	**3.52**	**ML**
Total Sediment Basin Storage Volume is	**10.57**	**ML**

Sediment Basin Storage Volume Estimation
BASIN ID: SB1 (Developed Case)

$V_s = 10 * R_{(Y\%,\ 5\text{-}day)} * Cv * A$

A = 7.650 ha

$$C_{V(composite)} = \frac{C_{V(pervious)} \cdot (A - A_{(imp.)}) + A_{(imp.)}}{A}$$ Equation 4.12 (QUDM)

$C_{v\ (pervious)}$ = 0.75 Source: (Table B7, BPESC, IECA)

$F_{(imp)}$ = Adopted effective fraction impervious

$A_{(imp)}$ = 0 ha

$C_{v\ (composite)}$ = 0.75

$R_{(Y\%,\ 5\text{-}day)}$ = 50.7 mm

V_s = 2,909 m^3

V_s = 2.91 ML

$V_{SED} = 0.5 * V_s$

V_{SED} = 1.45 ML

1454 m^3

R (Y%, 5-day) Estimation (Source: BPESC, IECA, 2009)		
Location:	Ralston Quarry (Dubbo Rainfall used)	
R(Y%)	90	
K1		
K2		
$I_{(1yr,\ 120hr)}$		
$R_{(Y\%,\ 5\text{-}day)}$ =		Equation B8
$R_{(Y\%,\ 5\text{-}day)}$ =		EPL
$R_{(Y\%,\ 5\text{-}day)}$ =	50.7	Adopted

Sediment Basin Requires a Upper Settling Volume of	**2.91**	**ML**
Sediment Basin Requires a Sediment Storage Volume of	**1.45**	**ML**
Total Sediment Basin Storage Volume is	**4.36**	**ML**

Attachment 2

Water Balance Assessment

Year	Month	Day	Daily Recorded Rainfall (mm)	Mean Daily Evaporation (mm)	Runoff Coefficient	Catchment Area - Quarry (m^2)	Inputs	Outputs		Volume of Water in Basin (m^3)	Days Basin is empty	Predicted Frequency of Uncontrolled Discharge
					Quarry		Overland Flow runoff (m^3)	Evaporation (m^3)	Water Used in Operations (m^3)			
2012	1	1	0	9.8	0.6	261800	0	44.59	150	0	1	0
2012	1	2	0	9.8	0.6	261800	0	44.59	150	4000	0	0
2012	1	3	0	9.8	0.6	261800	0	44.59	150	3805.41	0	0
2012	1	4	0	9.8	0.6	261800	0	44.59	150	3610.82	0	0
2012	1	5	0	9.8	0.6	261800	0	44.59	150	3416.23	0	0
2012	1	6	0	9.8	0.6	261800	0	44.59	150	3221.64	0	0
2012	1	7	0	9.8	0.6	261800	0	44.59	150	3027.05	0	0
2012	1	8	0	9.8	0.6	261800	0	44.59	150	2832.46	0	0
2012	1	9	13.6	9.8	0.6	261800	2136.288	44.59	150	4774.158	0	0
2012	1	10	0	9.8	0.6	261800	0	44.59	150	4579.568	0	0
2012	1	11	0	9.8	0.6	261800	0	44.59	150	4384.978	0	0
2012	1	12	0	9.8	0.6	261800	0	44.59	150	4190.388	0	0
2012	1	13	0	9.8	0.6	261800	0	44.59	150	3995.798	0	0
2012	1	14	0	9.8	0.6	261800	0	44.59	150	3801.208	0	0
2012	1	15	29.6	9.8	0.6	261800	4649.568	44.59	150	8256.186	0	0
2012	1	16	1.6	9.8	0.6	261800	251.328	44.59	150	8312.924	0	0
2012	1	17	0	9.8	0.6	261800	0	44.59	150	8118.334	0	0
2012	1	18	0	9.8	0.6	261800	0	44.59	150	7923.744	0	0
2012	1	19	0	9.8	0.6	261800	0	44.59	150	7729.154	0	0
2012	1	20	0	9.8	0.6	261800	0	44.59	150	7534.564	0	0
2012	1	21	0	9.8	0.6	261800	0	44.59	150	7339.974	0	0
2012	1	22	10	9.8	0.6	261800	1570.8	44.59	150	8716.184	0	0
2012	1	23	0	9.8	0.6	261800	0	44.59	150	8521.594	0	0
2012	1	24	0	9.8	0.6	261800	0	44.59	150	8327.004	0	0
2012	1	25	1.4	9.8	0.6	261800	219.912	44.59	150	8352.326	0	0
2012	1	26	0	9.8	0.6	261800	0	44.59	150	8157.736	0	0
2012	1	27	4	9.8	0.6	261800	628.32	44.59	150	8591.466	0	0
2012	1	28	0	9.8	0.6	261800	0	44.59	150	8396.876	0	0
2012	1	29	9.8	9.8	0.6	261800	1539.384	44.59	150	9741.67	0	0
2012	1	30	0	9.8	0.6	261800	0	44.59	150	9547.08	0	0
2012	1	31	45.8	9.8	0.6	261800	7194.264	44.59	150	14930	0	1
2012	2	1	0.8	8.8	0.6	261800	125.664	40.04	150	14865.624	0	1
2012	2	2	2.8	8.8	0.6	261800	439.824	40.04	150	14930	0	1
2012	2	3	0	8.8	0.6	261800	0	40.04	150	14739.96	0	0
2012	2	4	67.8	8.8	0.6	261800	10650.024	40.04	150	14930	0	1
2012	2	5	0	8.8	0.6	261800	0	40.04	150	14739.96	0	0
2012	2	6	0	8.8	0.6	261800	0	40.04	150	14549.92	0	0
2012	2	7	0	8.8	0.6	261800	0	40.04	150	14359.88	0	0
2012	2	8	0	8.8	0.6	261800	0	40.04	150	14169.84	0	0
2012	2	9	0	8.8	0.6	261800	0	40.04	150	13979.8	0	0
2012	2	10	0	8.8	0.6	261800	0	40.04	150	13789.76	0	0
2012	2	11	0	8.8	0.6	261800	0	40.04	150	13599.72	0	0
2012	2	12	0	8.8	0.6	261800	0	40.04	150	13409.68	0	0
2012	2	13	0	8.8	0.6	261800	0	40.04	150	13219.64	0	0
2012	2	14	0	8.8	0.6	261800	0	40.04	150	13029.6	0	0
2012	2	15	0	8.8	0.6	261800	0	40.04	150	12839.56	0	0
2012	2	16	0	8.8	0.6	261800	0	40.04	150	12649.52	0	0
2012	2	17	0	8.8	0.6	261800	0	40.04	150	12459.48	0	0
2012	2	18	0	8.8	0.6	261800	0	40.04	150	12269.44	0	0
2012	2	19	8	8.8	0.6	261800	1256.64	40.04	150	13336.04	0	0
2012	2	20	2.2	8.8	0.6	261800	345.576	40.04	150	13491.576	0	0
2012	2	21	5.8	8.8	0.6	261800	911.064	40.04	150	14212.6	0	1
2012	2	22	0	8.8	0.6	261800	0	40.04	150	14022.56	0	0
2012	2	23	0	8.8	0.6	261800	0	40.04	150	13832.52	0	0
2012	2	24	0	8.8	0.6	261800	0	40.04	150	13642.48	0	0
2012	2	25	0	8.8	0.6	261800	0	40.04	150	13452.44	0	0
2012	2	26	0	8.8	0.6	261800	0	40.04	150	13262.4	0	0
2012	2	27	11.2	8.8	0.6	261800	1759.296	40.04	150	14831.656	0	1
2012	2	28	0	8.8	0.6	261800	0	40.04	150	14641.616	0	0
2012	2	29	0	8.8	0.6	261800	0	40.04	150	14451.576	0	0
2012	3	1	0	6.9	0.6	261800	0	31.395	150	14270.181	0	0
2012	3	2	45	6.9	0.6	261800	7068.6	31.395	150	14930	0	1
2012	3	3	18	6.9	0.6	261800	2827.44	31.395	150	14930	0	1
2012	3	4	0	6.9	0.6	261800	0	31.395	150	14748.605	0	0
2012	3	5	20.6	6.9	0.6	261800	3235.848	31.395	150	14930	0	1
2012	3	6	0	6.9	0.6	261800	0	31.395	150	14748.605	0	0
2012	3	7	0	6.9	0.6	261800	0	31.395	150	14567.21	0	0
2012	3	8	0	6.9	0.6	261800	0	31.395	150	14385.815	0	0
2012	3	9	0	6.9	0.6	261800	0	31.395	150	14204.42	0	0
2012	3	10	0	6.9	0.6	261800	0	31.395	150	14023.025	0	0
2012	3	11	0	6.9	0.6	261800	0	31.395	150	13841.63	0	0
2012	3	12	0	6.9	0.6	261800	0	31.395	150	13660.235	0	0
2012	3	13	0	6.9	0.6	261800	0	31.395	150	13478.84	0	0
2012	3	14	0	6.9	0.6	261800	0	31.395	150	13297.445	0	0
2012	3	15	0	6.9	0.6	261800	0	31.395	150	13116.05	0	0
2012	3	16	0	6.9	0.6	261800	0	31.395	150	12934.655	0	0
2012	3	17	0	6.9	0.6	261800	0	31.395	150	12753.26	0	0
2012	3	18	21	6.9	0.6	261800	3298.68	31.395	150	14930	0	1
2012	3	19	0	6.9	0.6	261800	0	31.395	150	14748.605	0	0
2012	3	20	0	6.9	0.6	261800	0	31.395	150	14567.21	0	0
2012	3	21	0	6.9	0.6	261800	0	31.395	150	14385.815	0	0
2012	3	22	0	6.9	0.6	261800	0	31.395	150	14204.42	0	0
2012	3	23	0	6.9	0.6	261800	0	31.395	150	14023.025	0	0
2012	3	24	0	6.9	0.6	261800	0	31.395	150	13841.63	0	0
2012	3	25	0	6.9	0.6	261800	0	31.395	150	13660.235	0	0
2012	3	26	0	6.9	0.6	261800	0	31.395	150	13478.84	0	0
2012	3	27	0	6.9	0.6	261800	0	31.395	150	13297.445	0	0
2012	3	28	0	6.9	0.6	261800	0	31.395	150	13116.05	0	0
2012	3	29	5.8	6.9	0.6	261800	911.064	31.395	150	13845.719	0	0
2012	3	30	0	6.9	0.6	261800	0	31.395	150	13664.324	0	0
2012	3	31	0	6.9	0.6	261800	0	31.395	150	13482.929	0	0
2012	4	1	0	4.6	0.6	261800	0	20.93	150	13311.999	0	0
2012	4	2	0	4.6	0.6	261800	0	20.93	150	13141.069	0	0
2012	4	3	0	4.6	0.6	261800	0	20.93	150	12970.139	0	0
2012	4	4	0	4.6	0.6	261800	0	20.93	150	12799.209	0	0
2012	4	5	0	4.6	0.6	261800	0	20.93	150	12628.279	0	0
2012	4	6	0	4.6	0.6	261800	0	20.93	150	12457.349	0	0
2012	4	7	0	4.6	0.6	261800	0	20.93	150	12286.419	0	0
2012	4	8	0	4.6	0.6	261800	0	20.93	150	12115.489	0	0
2012	4	9	0	4.6	0.6	261800	0	20.93	150	11944.559	0	0
2012	4	10	0	4.6	0.6	261800	0	20.93	150	11773.629	0	0
2012	4	11	0	4.6	0.6	261800	0	20.93	150	11602.699	0	0
2012	4	12	0	4.6	0.6	261800	0	20.93	150	11431.769	0	0
2012	4	13	0	4.6	0.6	261800	0	20.93	150	11260.839	0	0
2012	4	14	0	4.6	0.6	261800	0	20.93	150	11089.909	0	0
2012	4	15	0	4.6	0.6	261800	0	20.93	150	10918.979	0	0
2012	4	16	0	4.6	0.6	261800	0	20.93	150	10748.049	0	0
2012	4	17	0	4.6	0.6	261800	0	20.93	150	10577.119	0	0
2012	4	18	0	4.6	0.6	261800	0	20.93	150	10406.189	0	0
2012	4	19	0	4.6	0.6	261800	0	20.93	150	10235.259	0	0
2012	4	20	0	4.6	0.6	261800	0	20.93	150	10064.329	0	0
2012	4	21	0	4.6	0.6	261800	0	20.93	150	9893.399	0	0
2012	4	22	0	4.6	0.6	261800	0	20.93	150	9722.469	0	0
2012	4	23	0	4.6	0.6	261800	0	20.93	150	9551.539	0	0

2012	4	24	0	4.6	0.6	261800	0	20.93	150	9380.609	0	0
2012	4	25	0	4.6	0.6	261800	0	20.93	150	9209.679	0	0
2012	4	26	0	4.6	0.6	261800	0	20.93	150	9038.749	0	0
2012	4	27	0	4.6	0.6	261800	0	20.93	150	8867.819	0	0
2012	4	28	0	4.6	0.6	261800	0	20.93	150	8696.889	0	0
2012	4	29	0	4.6	0.6	261800	0	20.93	150	8525.959	0	0
2012	4	30	0	4.6	0.6	261800	0	20.93	150	8355.029	0	0
2012	5	1	0	2.6	0.6	261800	0	11.83	150	8193.199	0	0
2012	5	2	0	2.6	0.6	261800	0	11.83	150	8031.369	0	0
2012	5	3	22.6	2.6	0.6	261800	3550.008	11.83	150	11419.547	0	1
2012	5	4	0	2.6	0.6	261800	0	11.83	150	11257.717	0	0
2012	5	5	0	2.6	0.6	261800	0	11.83	150	11095.887	0	0
2012	5	6	0	2.6	0.6	261800	0	11.83	150	10934.057	0	0
2012	5	7	0	2.6	0.6	261800	0	11.83	150	10772.227	0	0
2012	5	8	0	2.6	0.6	261800	0	11.83	150	10610.397	0	0
2012	5	9	0	2.6	0.6	261800	0	11.83	150	10448.567	0	0
2012	5	10	0	2.6	0.6	261800	0	11.83	150	10286.737	0	0
2012	5	11	0	2.6	0.6	261800	0	11.83	150	10124.907	0	0
2012	5	12	0	2.6	0.6	261800	0	11.83	150	9963.077	0	0
2012	5	13	0	2.6	0.6	261800	0	11.83	150	9801.247	0	0
2012	5	14	0	2.6	0.6	261800	0	11.83	150	9639.417	0	0
2012	5	15	0	2.6	0.6	261800	0	11.83	150	9477.587	0	0
2012	5	16	0	2.6	0.6	261800	0	11.83	150	9315.757	0	0
2012	5	17	0	2.6	0.6	261800	0	11.83	150	9153.927	0	0
2012	5	18	0	2.6	0.6	261800	0	11.83	150	8992.097	0	0
2012	5	19	0	2.6	0.6	261800	0	11.83	150	8830.267	0	0
2012	5	20	0	2.6	0.6	261800	0	11.83	150	8668.437	0	0
2012	5	21	0	2.6	0.6	261800	0	11.83	150	8506.607	0	0
2012	5	22	0	2.6	0.6	261800	0	11.83	150	8344.777	0	0
2012	5	23	0	2.6	0.6	261800	0	11.83	150	8182.947	0	0
2012	5	24	0	2.6	0.6	261800	0	11.83	150	8021.117	0	0
2012	5	25	45	2.6	0.6	261800	7068.6	11.83	150	14927.887	0	1
2012	5	26	0	2.6	0.6	261800	0	11.83	150	14766.057	0	0
2012	5	27	0	2.6	0.6	261800	0	11.83	150	14604.227	0	0
2012	5	28	0	2.6	0.6	261800	0	11.83	150	14442.397	0	0
2012	5	29	0	2.6	0.6	261800	0	11.83	150	14280.567	0	0
2012	5	30	0	2.6	0.6	261800	0	11.83	150	14118.737	0	0
2012	5	31	0	2.6	0.6	261800	0	11.83	150	13956.907	0	0
2012	6	1	0	1.8	0.6	261800	0	8.19	150	13798.717	0	0
2012	6	2	0	1.8	0.6	261800	0	8.19	150	13640.527	0	0
2012	6	3	0	1.8	0.6	261800	0	8.19	150	13482.337	0	0
2012	6	4	8	1.8	0.6	261800	1256.64	8.19	150	14580.787	0	1
2012	6	5	0	1.8	0.6	261800	0	8.19	150	14422.597	0	0
2012	6	6	0	1.8	0.6	261800	0	8.19	150	14264.407	0	0
2012	6	7	0	1.8	0.6	261800	0	8.19	150	14106.217	0	0
2012	6	8	0	1.8	0.6	261800	0	8.19	150	13948.027	0	0
2012	6	9	0	1.8	0.6	261800	0	8.19	150	13789.837	0	0
2012	6	10	0	1.8	0.6	261800	0	8.19	150	13631.647	0	0
2012	6	11	0	1.8	0.6	261800	0	8.19	150	13473.457	0	0
2012	6	12	0	1.8	0.6	261800	0	8.19	150	13315.267	0	0
2012	6	13	0	1.8	0.6	261800	0	8.19	150	13157.077	0	0
2012	6	14	0	1.8	0.6	261800	0	8.19	150	12998.887	0	0
2012	6	15	0	1.8	0.6	261800	0	8.19	150	12840.697	0	0
2012	6	16	0	1.8	0.6	261800	0	8.19	150	12682.507	0	0
2012	6	17	8.6	1.8	0.6	261800	1350.888	8.19	150	13875.205	0	1
2012	6	18	0	1.8	0.6	261800	0	8.19	150	13717.015	0	0
2012	6	19	0	1.8	0.6	261800	0	8.19	150	13558.825	0	0
2012	6	20	0	1.8	0.6	261800	0	8.19	150	13400.635	0	0
2012	6	21	0	1.8	0.6	261800	0	8.19	150	13242.445	0	0
2012	6	22	0	1.8	0.6	261800	0	8.19	150	13084.255	0	0
2012	6	23	0	1.8	0.6	261800	0	8.19	150	12926.065	0	0
2012	6	24	0	1.8	0.6	261800	0	8.19	150	12767.875	0	0
2012	6	25	0	1.8	0.6	261800	0	8.19	150	12609.685	0	0
2012	6	26	0	1.8	0.6	261800	0	8.19	150	12451.495	0	0
2012	6	27	0	1.8	0.6	261800	0	8.19	150	12293.305	0	0
2012	6	28	0	1.8	0.6	261800	0	8.19	150	12135.115	0	0
2012	6	29	0	1.8	0.6	261800	0	8.19	150	11976.925	0	0
2012	6	30	0	1.8	0.6	261800	0	8.19	150	11818.735	0	0
2012	7	1	0	1.8	0.6	261800	0	8.19	150	11660.545	0	0
2012	7	2	0	1.8	0.6	261800	0	8.19	150	11502.355	0	0
2012	7	3	0	1.8	0.6	261800	0	8.19	150	11344.165	0	0
2012	7	4	0	1.8	0.6	261800	0	8.19	150	11185.975	0	0
2012	7	5	0	1.8	0.6	261800	0	8.19	150	11027.785	0	0
2012	7	6	0	1.8	0.6	261800	0	8.19	150	10869.595	0	0
2012	7	7	0	1.8	0.6	261800	0	8.19	150	10711.405	0	0
2012	7	8	0	1.8	0.6	261800	0	8.19	150	10553.215	0	0
2012	7	9	0	1.8	0.6	261800	0	8.19	150	10395.025	0	0
2012	7	10	0	1.8	0.6	261800	0	8.19	150	10236.835	0	0
2012	7	11	32.2	1.8	0.6	261800	5057.976	8.19	150	14930	0	1
2012	7	12	5.6	1.8	0.6	261800	879.648	8.19	150	14930	0	1
2012	7	13	0	1.8	0.6	261800	0	8.19	150	14771.81	0	0
2012	7	14	17.6	1.8	0.6	261800	2764.608	8.19	150	14930	0	1
2012	7	15	0	1.8	0.6	261800	0	8.19	150	14771.81	0	0
2012	7	16	0	1.8	0.6	261800	0	8.19	150	14613.62	0	0
2012	7	17	0	1.8	0.6	261800	0	8.19	150	14455.43	0	0
2012	7	18	0	1.8	0.6	261800	0	8.19	150	14297.24	0	0
2012	7	19	0	1.8	0.6	261800	0	8.19	150	14139.05	0	0
2012	7	20	0	1.8	0.6	261800	0	8.19	150	13980.86	0	0
2012	7	21	0	1.8	0.6	261800	0	8.19	150	13822.67	0	0
2012	7	22	0	1.8	0.6	261800	0	8.19	150	13664.48	0	0
2012	7	23	0	1.8	0.6	261800	0	8.19	150	13506.29	0	0
2012	7	24	0	1.8	0.6	261800	0	8.19	150	13348.1	0	0
2012	7	25	0	1.8	0.6	261800	0	8.19	150	13189.91	0	0
2012	7	26	3.6	1.8	0.6	261800	565.488	8.19	150	13597.208	0	0
2012	7	27	0	1.8	0.6	261800	0	8.19	150	13439.018	0	0
2012	7	28	0	1.8	0.6	261800	0	8.19	150	13280.828	0	0
2012	7	29	0	1.8	0.6	261800	0	8.19	150	13122.638	0	0
2012	7	30	0	1.8	0.6	261800	0	8.19	150	12964.448	0	0
2012	7	31	0	1.8	0.6	261800	0	8.19	150	12806.258	0	0
2012	8	1	0	2.7	0.6	261800	0	12.285	150	12643.973	0	0
2012	8	2	0	2.7	0.6	261800	0	12.285	150	12481.688	0	0
2012	8	3	0	2.7	0.6	261800	0	12.285	150	12319.403	0	0
2012	8	4	0	2.7	0.6	261800	0	12.285	150	12157.118	0	0
2012	8	5	0	2.7	0.6	261800	0	12.285	150	11994.833	0	0
2012	8	6	0	2.7	0.6	261800	0	12.285	150	11832.548	0	0
2012	8	7	0	2.7	0.6	261800	0	12.285	150	11670.263	0	0
2012	8	8	0	2.7	0.6	261800	0	12.285	150	11507.978	0	0
2012	8	9	0	2.7	0.6	261800	0	12.285	150	11345.693	0	0
2012	8	10	0	2.7	0.6	261800	0	12.285	150	11183.408	0	0
2012	8	11	0	2.7	0.6	261800	0	12.285	150	11021.123	0	0
2012	8	12	0	2.7	0.6	261800	0	12.285	150	10858.838	0	0
2012	8	13	0	2.7	0.6	261800	0	12.285	150	10696.553	0	0
2012	8	14	0	2.7	0.6	261800	0	12.285	150	10534.268	0	0
2012	8	15	0	2.7	0.6	261800	0	12.285	150	10371.983	0	0
2012	8	16	0	2.7	0.6	261800	0	12.285	150	10209.698	0	0
2012	8	17	0	2.7	0.6	261800	0	12.285	150	10047.413	0	0
2012	8	18	0	2.7	0.6	261800	0	12.285	150	9885.128	0	0
2012	8	19	0	2.7	0.6	261800	0	12.285	150	9722.843	0	0
2012	8	20	0	2.7	0.6	261800	0	12.285	150	9560.558	0	0
2012	8	21	0	2.7	0.6	261800	0	12.285	150	9398.273	0	0

2012	8	22	0	2.7	0.6	261800	0	12.285	150	9235.988	0	0
2012	8	23	0	2.7	0.6	261800	0	12.285	150	9073.703	0	0
2012	8	24	0	2.7	0.6	261800	0	12.285	150	8911.418	0	0
2012	8	25	0	2.7	0.6	261800	0	12.285	150	8749.133	0	0
2012	8	26	0	2.7	0.6	261800	0	12.285	150	8586.848	0	0
2012	8	27	0	2.7	0.6	261800	0	12.285	150	8424.563	0	0
2012	8	28	0	2.7	0.6	261800	0	12.285	150	8262.278	0	0
2012	8	29	0	2.7	0.6	261800	0	12.285	150	8099.993	0	0
2012	8	30	0	2.7	0.6	261800	0	12.285	150	7937.708	0	0
2012	8	31	0	2.7	0.6	261800	0	12.285	150	7775.423	0	0
2012	9	1	0	4	0.6	261800	0	18.2	150	7607.223	0	0
2012	9	2	0	4	0.6	261800	0	18.2	150	7439.023	0	0
2012	9	3	0	4	0.6	261800	0	18.2	150	7270.823	0	0
2012	9	4	0	4	0.6	261800	0	18.2	150	7102.623	0	0
2012	9	5	0	4	0.6	261800	0	18.2	150	6934.423	0	0
2012	9	6	0	4	0.6	261800	0	18.2	150	6766.223	0	0
2012	9	7	0	4	0.6	261800	0	18.2	150	6598.023	0	0
2012	9	8	0	4	0.6	261800	0	18.2	150	6429.823	0	0
2012	9	9	0	4	0.6	261800	0	18.2	150	6261.623	0	0
2012	9	10	0	4	0.6	261800	0	18.2	150	6093.423	0	0
2012	9	11	0	4	0.6	261800	0	18.2	150	5925.223	0	0
2012	9	12	0	4	0.6	261800	0	18.2	150	5757.023	0	0
2012	9	13	0	4	0.6	261800	0	18.2	150	5588.823	0	0
2012	9	14	9.8	4	0.6	261800	1539.384	18.2	150	6960.007	0	0
2012	9	15	0	4	0.6	261800	0	18.2	150	6791.807	0	0
2012	9	16	0	4	0.6	261800	0	18.2	150	6623.607	0	0
2012	9	17	0	4	0.6	261800	0	18.2	150	6455.407	0	0
2012	9	18	0	4	0.6	261800	0	18.2	150	6287.207	0	0
2012	9	19	0	4	0.6	261800	0	18.2	150	6119.007	0	0
2012	9	20	0	4	0.6	261800	0	18.2	150	5950.807	0	0
2012	9	21	7.2	4	0.6	261800	1130.976	18.2	150	6913.583	0	0
2012	9	22	0	4	0.6	261800	0	18.2	150	6745.383	0	0
2012	9	23	0	4	0.6	261800	0	18.2	150	6577.183	0	0
2012	9	24	0	4	0.6	261800	0	18.2	150	6408.983	0	0
2012	9	25	0	4	0.6	261800	0	18.2	150	6240.783	0	0
2012	9	26	0	4	0.6	261800	0	18.2	150	6072.583	0	0
2012	9	27	0	4	0.6	261800	0	18.2	150	5904.383	0	0
2012	9	28	0	4	0.6	261800	0	18.2	150	5736.183	0	0
2012	9	29	19.6	4	0.6	261800	3078.768	18.2	150	8646.751	0	0
2012	9	30	0	4	0.6	261800	0	18.2	150	8478.551	0	0
2012	10	1	0	6	0.6	261800	0	27.3	150	8301.251	0	0
2012	10	2	0	6	0.6	261800	0	27.3	150	8123.951	0	0
2012	10	3	0	6	0.6	261800	0	27.3	150	7946.651	0	0
2012	10	4	0	6	0.6	261800	0	27.3	150	7769.351	0	0
2012	10	5	0	6	0.6	261800	0	27.3	150	7592.051	0	0
2012	10	6	0	6	0.6	261800	0	27.3	150	7414.751	0	0
2012	10	7	0	6	0.6	261800	0	27.3	150	7237.451	0	0
2012	10	8	0	6	0.6	261800	0	27.3	150	7060.151	0	0
2012	10	9	0	6	0.6	261800	0	27.3	150	6882.851	0	0
2012	10	10	0	6	0.6	261800	0	27.3	150	6705.551	0	0
2012	10	11	0	6	0.6	261800	0	27.3	150	6528.251	0	0
2012	10	12	0	6	0.6	261800	0	27.3	150	6350.951	0	0
2012	10	13	0	6	0.6	261800	0	27.3	150	6173.651	0	0
2012	10	14	0	6	0.6	261800	0	27.3	150	5996.351	0	0
2012	10	15	0	6	0.6	261800	0	27.3	150	5819.051	0	0
2012	10	16	0	6	0.6	261800	0	27.3	150	5641.751	0	0
2012	10	17	0	6	0.6	261800	0	27.3	150	5464.451	0	0
2012	10	18	0	6	0.6	261800	0	27.3	150	5287.151	0	0
2012	10	19	0	6	0.6	261800	0	27.3	150	5109.851	0	0
2012	10	20	0	6	0.6	261800	0	27.3	150	4932.551	0	0
2012	10	21	0	6	0.6	261800	0	27.3	150	4755.251	0	0
2012	10	22	0	6	0.6	261800	0	27.3	150	4577.951	0	0
2012	10	23	0	6	0.6	261800	0	27.3	150	4400.651	0	0
2012	10	24	0	6	0.6	261800	0	27.3	150	4223.351	0	0
2012	10	25	0	6	0.6	261800	0	27.3	150	4046.051	0	0
2012	10	26	0	6	0.6	261800	0	27.3	150	3868.751	0	0
2012	10	27	0	6	0.6	261800	0	27.3	150	3691.451	0	0
2012	10	28	0	6	0.6	261800	0	27.3	150	3514.151	0	0
2012	10	29	0	6	0.6	261800	0	27.3	150	3336.851	0	0
2012	10	30	0	6	0.6	261800	0	27.3	150	3159.551	0	0
2012	10	31	0	6	0.6	261800	0	27.3	150	2982.251	0	0
2012	11	1	0	8.1	0.6	261800	0	36.855	150	2795.396	0	0
2012	11	2	0	8.1	0.6	261800	0	36.855	150	2608.541	0	0
2012	11	3	0	8.1	0.6	261800	0	36.855	150	2421.686	0	0
2012	11	4	0	8.1	0.6	261800	0	36.855	150	2234.831	0	0
2012	11	5	0	8.1	0.6	261800	0	36.855	150	2047.976	0	0
2012	11	6	0	8.1	0.6	261800	0	36.855	150	1861.121	0	0
2012	11	7	0	8.1	0.6	261800	0	36.855	150	1674.266	0	0
2012	11	8	17.6	8.1	0.6	261800	2764.608	36.855	150	4252.019	0	0
2012	11	9	0	8.1	0.6	261800	0	36.855	150	4065.164	0	0
2012	11	10	0	8.1	0.6	261800	0	36.855	150	3878.309	0	0
2012	11	11	0	8.1	0.6	261800	0	36.855	150	3691.454	0	0
2012	11	12	0	8.1	0.6	261800	0	36.855	150	3504.599	0	0
2012	11	13	0	8.1	0.6	261800	0	36.855	150	3317.744	0	0
2012	11	14	0	8.1	0.6	261800	0	36.855	150	3130.889	0	0
2012	11	15	0	8.1	0.6	261800	0	36.855	150	2944.034	0	0
2012	11	16	0	8.1	0.6	261800	0	36.855	150	2757.179	0	0
2012	11	17	0	8.1	0.6	261800	0	36.855	150	2570.324	0	0
2012	11	18	0	8.1	0.6	261800	0	36.855	150	2383.469	0	0
2012	11	19	0	8.1	0.6	261800	0	36.855	150	2196.614	0	0
2012	11	20	0	8.1	0.6	261800	0	36.855	150	2009.759	0	0
2012	11	21	0	8.1	0.6	261800	0	36.855	150	1822.904	0	0
2012	11	22	0	8.1	0.6	261800	0	36.855	150	1636.049	0	0
2012	11	23	0	8.1	0.6	261800	0	36.855	150	1449.194	0	0
2012	11	24	0	8.1	0.6	261800	0	36.855	150	1262.339	0	0
2012	11	25	0	8.1	0.6	261800	0	36.855	150	1075.484	0	0
2012	11	26	0	8.1	0.6	261800	0	36.855	150	888.629	0	0
2012	11	27	1.4	8.1	0.6	261800	219.912	36.855	150	921.686	0	0
2012	11	28	0	8.1	0.6	261800	0	36.855	150	734.831	0	0
2012	11	29	5.2	8.1	0.6	261800	816.816	36.855	150	1364.792	0	0
2012	11	30	0	8.1	0.6	261800	0	36.855	150	1177.937	0	0
2012	12	1	0	9.7	0.6	261800	0	44.135	150	983.802	0	0
2012	12	2	0	9.7	0.6	261800	0	44.135	150	789.667	0	0
2012	12	3	0	9.7	0.6	261800	0	44.135	150	595.532	0	0
2012	12	4	0	9.7	0.6	261800	0	44.135	150	401.397	0	0
2012	12	5	0	9.7	0.6	261800	0	44.135	150	207.262	0	0
2012	12	6	0	9.7	0.6	261800	0	44.135	150	13.127	0	0
2012	12	7	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	8	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	9	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	10	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	11	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	12	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	13	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	14	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	15	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	16	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	17	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	18	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	19	0	9.7	0.6	261800	0	44.135	150	0	1	0

2012	12	20	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	21	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	22	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	23	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	24	0	9.7	0.6	261800	0	44.135	150	0	1	0
2012	12	25	9.8	9.7	0.6	261800	1539.384	44.135	150	1345.249	0	0
2012	12	26	13.4	9.7	0.6	261800	2104.872	44.135	150	3255.986	0	0
2012	12	27	0	9.7	0.6	261800	0	44.135	150	3061.851	0	0
2012	12	28	0	9.7	0.6	261800	0	44.135	150	2867.716	0	0
2012	12	29	0	9.7	0.6	261800	0	44.135	150	2673.581	0	0
2012	12	30	0	9.7	0.6	261800	0	44.135	150	2479.446	0	0
							86708.16	9213.75	54750		19	17

Year	Month	Day	Daily Recorded Rainfall (mm)	Mean Daily Evaporation (mm)	Runoff Coefficient		Catchment Area - Quarry (m^2)	Catchment Area - Clean (m^2)	Inputs	Outputs		Volume of Harvested Water Remaining (m^3)	Days Basin is empty	Predicted Frequency of Uncontrolled Discharge
					Quarry	Clean			Overland Flow Quarry (m^3)	Evaporation (m^3)	Water Used in Operations (m^3)			
2013	1	1	0	9.8	0.6	0.6	261800	0	0	44.59	150	0	1	0
2013	1	2	0	9.8	0.6	0.6	261800	0	0	44.59	150	4000	0	0
2013	1	3	0	9.8	0.6	0.6	261800	0	0	44.59	150	3805.41	0	0
2013	1	4	0	9.8	0.6	0.6	261800	0	0	44.59	150	3610.82	0	0
2013	1	5	0	9.8	0.6	0.6	261800	0	0	44.59	150	3416.23	0	0
2013	1	6	0	9.8	0.6	0.6	261800	0	0	44.59	150	3221.64	0	0
2013	1	7	0	9.8	0.6	0.6	261800	0	0	44.59	150	3027.05	0	0
2013	1	8	0	9.8	0.6	0.6	261800	0	0	44.59	150	2832.46	0	0
2013	1	9	0	9.8	0.6	0.6	261800	0	0	44.59	150	2637.87	0	0
2013	1	10	0	9.8	0.6	0.6	261800	0	0	44.59	150	2443.28	0	0
2013	1	11	0	9.8	0.6	0.6	261800	0	0	44.59	150	2248.69	0	0
2013	1	12	0	9.8	0.6	0.6	261800	0	0	44.59	150	2054.1	0	0
2013	1	13	0	9.8	0.6	0.6	261800	0	0	44.59	150	1859.51	0	0
2013	1	14	0	9.8	0.6	0.6	261800	0	0	44.59	150	1664.92	0	0
2013	1	15	0	9.8	0.6	0.6	261800	0	0	44.59	150	1470.33	0	0
2013	1	16	0	9.8	0.6	0.6	261800	0	0	44.59	150	1275.74	0	0
2013	1	17	0	9.8	0.6	0.6	261800	0	0	44.59	150	1081.15	0	0
2013	1	18	0	9.8	0.6	0.6	261800	0	0	44.59	150	886.56	0	0
2013	1	19	0	9.8	0.6	0.6	261800	0	0	44.59	150	691.97	0	0
2013	1	20	3.6	9.8	0.6	0.6	261800	0	565.488	44.59	150	1062.868	0	0
2013	1	21	0	9.8	0.6	0.6	261800	0	0	44.59	150	868.278	0	0
2013	1	22	0	9.8	0.6	0.6	261800	0	0	44.59	150	673.688	0	0
2013	1	23	26.6	9.8	0.6	0.6	261800	0	4178.328	44.59	150	4657.426	0	0
2013	1	24	0	9.8	0.6	0.6	261800	0	0	44.59	150	4462.836	0	0
2013	1	25	0	9.8	0.6	0.6	261800	0	0	44.59	150	4268.246	0	0
2013	1	26	0	9.8	0.6	0.6	261800	0	0	44.59	150	4073.656	0	0
2013	1	27	7.2	9.8	0.6	0.6	261800	0	1130.976	44.59	150	5010.042	0	0
2013	1	28	0	9.8	0.6	0.6	261800	0	0	44.59	150	4815.452	0	0
2013	1	29	7.4	9.8	0.6	0.6	261800	0	1162.392	44.59	150	5783.254	0	0
2013	1	30	0	9.8	0.6	0.6	261800	0	0	44.59	150	5588.664	0	0
2013	1	31	0	9.8	0.6	0.6	261800	0	0	44.59	150	5394.074	0	0
2013	2	1	0	8.8	0.6	0.6	261800	0	0	40.04	150	5204.034	0	0
2013	2	2	27.2	8.8	0.6	0.6	261800	0	4272.576	40.04	150	9286.57	0	0
2013	2	3	0	8.8	0.6	0.6	261800	0	0	40.04	150	9096.53	0	0
2013	2	4	0	8.8	0.6	0.6	261800	0	0	40.04	150	8906.49	0	0
2013	2	5	0	8.8	0.6	0.6	261800	0	0	40.04	150	8716.45	0	0
2013	2	6	0	8.8	0.6	0.6	261800	0	0	40.04	150	8526.41	0	0
2013	2	7	0	8.8	0.6	0.6	261800	0	0	40.04	150	8336.37	0	0
2013	2	8	0	8.8	0.6	0.6	261800	0	0	40.04	150	8146.33	0	0
2013	2	9	0	8.8	0.6	0.6	261800	0	0	40.04	150	7956.29	0	0
2013	2	10	0	8.8	0.6	0.6	261800	0	0	40.04	150	7766.25	0	0
2013	2	11	0	8.8	0.6	0.6	261800	0	0	40.04	150	7576.21	0	0
2013	2	12	16.8	8.8	0.6	0.6	261800	0	2638.944	40.04	150	10025.114	0	0
2013	2	13	0	8.8	0.6	0.6	261800	0	0	40.04	150	9835.074	0	0
2013	2	14	0	8.8	0.6	0.6	261800	0	0	40.04	150	9645.034	0	0
2013	2	15	0	8.8	0.6	0.6	261800	0	0	40.04	150	9454.994	0	0
2013	2	16	9.4	8.8	0.6	0.6	261800	0	1476.552	40.04	150	10741.506	0	0
2013	2	17	0	8.8	0.6	0.6	261800	0	0	40.04	150	10551.466	0	0
2013	2	18	0	8.8	0.6	0.6	261800	0	0	40.04	150	10361.426	0	0
2013	2	19	0	8.8	0.6	0.6	261800	0	0	40.04	150	10171.386	0	0
2013	2	20	0	8.8	0.6	0.6	261800	0	0	40.04	150	9981.346	0	0
2013	2	21	0	8.8	0.6	0.6	261800	0	0	40.04	150	9791.306	0	0
2013	2	22	0	8.8	0.6	0.6	261800	0	0	40.04	150	9601.266	0	0
2013	2	23	0	8.8	0.6	0.6	261800	0	0	40.04	150	9411.226	0	0
2013	2	24	30	8.8	0.6	0.6	261800	0	4712.4	40.04	150	13933.586	0	1
2013	2	25	0	8.8	0.6	0.6	261800	0	0	40.04	150	13743.546	0	0
2013	2	26	0	8.8	0.6	0.6	261800	0	0	40.04	150	13553.506	0	0
2013	2	27	0	8.8	0.6	0.6	261800	0	0	40.04	150	13363.466	0	0
2013	2	28	0	8.8	0.6	0.6	261800	0	0	40.04	150	13173.426	0	0
2013	3	1	0	6.9	0.6	0.6	261800	0	0	31.395	150	12992.031	0	0
2013	3	2	0	6.9	0.6	0.6	261800	0	0	31.395	150	12810.636	0	0
2013	3	3	54.6	6.9	0.6	0.6	261800	0	8576.568	31.395	150	14930	0	1
2013	3	4	0	6.9	0.6	0.6	261800	0	0	31.395	150	14748.605	0	0
2013	3	5	0	6.9	0.6	0.6	261800	0	0	31.395	150	14567.21	0	0
2013	3	6	0	6.9	0.6	0.6	261800	0	0	31.395	150	14385.815	0	0
2013	3	7	0	6.9	0.6	0.6	261800	0	0	31.395	150	14204.42	0	0
2013	3	8	0	6.9	0.6	0.6	261800	0	0	31.395	150	14023.025	0	0
2013	3	9	0	6.9	0.6	0.6	261800	0	0	31.395	150	13841.63	0	0
2013	3	10	0	6.9	0.6	0.6	261800	0	0	31.395	150	13660.235	0	0
2013	3	11	0	6.9	0.6	0.6	261800	0	0	31.395	150	13478.84	0	0
2013	3	12	0	6.9	0.6	0.6	261800	0	0	31.395	150	13297.445	0	0
2013	3	13	0	6.9	0.6	0.6	261800	0	0	31.395	150	13116.05	0	0
2013	3	14	0	6.9	0.6	0.6	261800	0	0	31.395	150	12934.655	0	0
2013	3	15	0	6.9	0.6	0.6	261800	0	0	31.395	150	12753.26	0	0
2013	3	16	0	6.9	0.6	0.6	261800	0	0	31.395	150	12571.865	0	0
2013	3	17	0	6.9	0.6	0.6	261800	0	0	31.395	150	12390.47	0	0
2013	3	18	0	6.9	0.6	0.6	261800	0	0	31.395	150	12209.075	0	0
2013	3	19	0	6.9	0.6	0.6	261800	0	0	31.395	150	12027.68	0	0
2013	3	20	0	6.9	0.6	0.6	261800	0	0	31.395	150	11846.285	0	0
2013	3	21	0	6.9	0.6	0.6	261800	0	0	31.395	150	11664.89	0	0
2013	3	22	0	6.9	0.6	0.6	261800	0	0	31.395	150	11483.495	0	0
2013	3	23	23	6.9	0.6	0.6	261800	0	3612.84	31.395	150	14914.94	0	1
2013	3	24	0	6.9	0.6	0.6	261800	0	0	31.395	150	14733.545	0	0
2013	3	25	0	6.9	0.6	0.6	261800	0	0	31.395	150	14552.15	0	0
2013	3	26	0	6.9	0.6	0.6	261800	0	0	31.395	150	14370.755	0	0
2013	3	27	0	6.9	0.6	0.6	261800	0	0	31.395	150	14189.36	0	0
2013	3	28	0	6.9	0.6	0.6	261800	0	0	31.395	150	14007.965	0	0
2013	3	29	0	6.9	0.6	0.6	261800	0	0	31.395	150	13826.57	0	0
2013	3	30	0	6.9	0.6	0.6	261800	0	0	31.395	150	13645.175	0	0
2013	3	31	3.8	6.9	0.6	0.6	261800	0	596.904	31.395	150	14060.684	0	0
2013	4	1	0	4.6	0.6	0.6	261800	0	0	20.93	150	13889.754	0	0
2013	4	2	0	4.6	0.6	0.6	261800	0	0	20.93	150	13718.824	0	0
2013	4	3	0	4.6	0.6	0.6	261800	0	0	20.93	150	13547.894	0	0
2013	4	4	0	4.6	0.6	0.6	261800	0	0	20.93	150	13376.964	0	0
2013	4	5	0	4.6	0.6	0.6	261800	0	0	20.93	150	13206.034	0	0
2013	4	6	0	4.6	0.6	0.6	261800	0	0	20.93	150	13035.104	0	0
2013	4	7	0	4.6	0.6	0.6	261800	0	0	20.93	150	12864.174	0	0
2013	4	8	0	4.6	0.6	0.6	261800	0	0	20.93	150	12693.244	0	0
2013	4	9	0	4.6	0.6	0.6	261800	0	0	20.93	150	12522.314	0	0
2013	4	10	0	4.6	0.6	0.6	261800	0	0	20.93	150	12351.384	0	0
2013	4	11	0	4.6	0.6	0.6	261800	0	0	20.93	150	12180.454	0	0
2013	4	12	0	4.6	0.6	0.6	261800	0	0	20.93	150	12009.524	0	0
2013	4	13	0	4.6	0.6	0.6	261800	0	0	20.93	150	11838.594	0	0
2013	4	14	0	4.6	0.6	0.6	261800	0	0	20.93	150	11667.664	0	0
2013	4	15	0	4.6	0.6	0.6	261800	0	0	20.93	150	11496.734	0	0
2013	4	16	0	4.6	0.6	0.6	261800	0	0	20.93	150	11325.804	0	0
2013	4	17	0	4.6	0.6	0.6	261800	0	0	20.93	150	11154.874	0	0
2013	4	18	0	4.6	0.6	0.6	261800	0	0	20.93	150	10983.944	0	0
2013	4	19	0	4.6	0.6	0.6	261800	0	0	20.93	150	10813.014	0	0
2013	4	20	0	4.6	0.6	0.6	261800	0	0	20.93	150	10642.084	0	0
2013	4	21	0	4.6	0.6	0.6	261800	0	0	20.93	150	10471.154	0	0
2013	4	22	0	4.6	0.6	0.6	261800	0	0	20.93	150	10300.224	0	0
2013	4	23	0	4.6	0.6	0.6	261800	0	0	20.93	150	10129.294	0	0
2013	4	24	0	4.6	0.6	0.6	261800	0	0	20.93	150	9958.364	0	0
2013	4	25	0	4.6	0.6	0.6	261800	0	0	20.93	150	9787.434	0	0
2013	4	26	0	4.6	0.6	0.6	261800	0	0	20.93	150	9616.504	0	0
2013	4	27	0	4.6	0.6	0.6	261800	0	0	20.93	150	9445.574	0	0
2013	4	28	0	4.6	0.6	0.6	261800	0	0	20.93	150	9274.644	0	0
2013	4	29	0	4.6	0.6	0.6	261800	0	0	20.93	150	9103.714	0	0
2013	4	30	0	4.6	0.6	0.6	261800	0	0	20.93	150	8932.784	0	0
2013	5	1	0	2.6	0.6	0.6	261800	0	0	11.83	150	8770.954	0	0
2013	5	2	0	2.6	0.6	0.6	261800	0	0	11.83	150	8609.124	0	0
2013	5	3	0	2.6	0.6	0.6	261800	0	0	11.83	150	8447.294	0	0
2013	5	4	0	2.6	0.6	0.6	261800	0	0	11.83	150	8285.464	0	0
2013	5	5	0	2.6	0.6	0.6	261800	0	0	11.83	150	8123.634	0	0
2013	5	6	0	2.6	0.6	0.6	261800	0	0	11.83	150	7961.804	0	0
2013	5	7	0	2.6	0.6	0.6	261800	0	0	11.83	150	7799.974	0	0

2013	5	8	0	2.6	0.6	0.6	261800	0	0	11.83	150	7638.144	0	0
2013	5	9	0	2.6	0.6	0.6	261800	0	0	11.83	150	7476.314	0	0
2013	5	10	0	2.6	0.6	0.6	261800	0	0	11.83	150	7314.484	0	0
2013	5	11	0	2.6	0.6	0.6	261800	0	0	11.83	150	7152.654	0	0
2013	5	12	0	2.6	0.6	0.6	261800	0	0	11.83	150	6990.824	0	0
2013	5	13	0	2.6	0.6	0.6	261800	0	0	11.83	150	6828.994	0	0
2013	5	14	14	2.6	0.6	0.6	261800	0	2199.12	11.83	150	8866.284	0	0
2013	5	15	0	2.6	0.6	0.6	261800	0	0	11.83	150	8704.454	0	0
2013	5	16	0	2.6	0.6	0.6	261800	0	0	11.83	150	8542.624	0	0
2013	5	17	0	2.6	0.6	0.6	261800	0	0	11.83	150	8380.794	0	0
2013	5	18	0	2.6	0.6	0.6	261800	0	0	11.83	150	8218.964	0	0
2013	5	19	0	2.6	0.6	0.6	261800	0	0	11.83	150	8057.134	0	0
2013	5	20	0	2.6	0.6	0.6	261800	0	0	11.83	150	7895.304	0	0
2013	5	21	0	2.6	0.6	0.6	261800	0	0	11.83	150	7733.474	0	0
2013	5	22	0	2.6	0.6	0.6	261800	0	0	11.83	150	7571.644	0	0
2013	5	23	8.8	2.6	0.6	0.6	261800	0	1382.304	11.83	150	8792.118	0	0
2013	5	24	0.4	2.6	0.6	0.6	261800	0	62.832	11.83	150	8693.12	0	0
2013	5	25	0	2.6	0.6	0.6	261800	0	0	11.83	150	8531.29	0	0
2013	5	26	0	2.6	0.6	0.6	261800	0	0	11.83	150	8369.46	0	0
2013	5	27	0	2.6	0.6	0.6	261800	0	0	11.83	150	8207.63	0	0
2013	5	28	0	2.6	0.6	0.6	261800	0	0	11.83	150	8045.8	0	0
2013	5	29	0	2.6	0.6	0.6	261800	0	0	11.83	150	7883.97	0	0
2013	5	30	0	2.6	0.6	0.6	261800	0	0	11.83	150	7722.14	0	0
2013	5	31	0	2.6	0.6	0.6	261800	0	0	11.83	150	7560.31	0	0
2013	6	1	0	1.8	0.6	0.6	261800	0	0	8.19	150	7402.12	0	0
2013	6	2	33.6	1.8	0.6	0.6	261800	0	5277.888	8.19	150	12521.818	0	1
2013	6	3	2.4	1.8	0.6	0.6	261800	0	376.992	8.19	150	12740.62	0	0
2013	6	4	0	1.8	0.6	0.6	261800	0	0	8.19	150	12582.43	0	0
2013	6	5	0	1.8	0.6	0.6	261800	0	0	8.19	150	12424.24	0	0
2013	6	6	0	1.8	0.6	0.6	261800	0	0	8.19	150	12266.05	0	0
2013	6	7	4.6	1.8	0.6	0.6	261800	0	722.568	8.19	150	12830.428	0	0
2013	6	8	0	1.8	0.6	0.6	261800	0	0	8.19	150	12672.238	0	0
2013	6	9	0	1.8	0.6	0.6	261800	0	0	8.19	150	12514.048	0	0
2013	6	10	0	1.8	0.6	0.6	261800	0	0	8.19	150	12355.858	0	0
2013	6	11	0	1.8	0.6	0.6	261800	0	0	8.19	150	12197.668	0	0
2013	6	12	12.2	1.8	0.6	0.6	261800	0	1916.376	8.19	150	13955.854	0	1
2013	6	13	5.6	1.8	0.6	0.6	261800	0	879.648	8.19	150	14677.312	0	1
2013	6	14	6.6	1.8	0.6	0.6	261800	0	1036.728	8.19	150	14930	0	1
2013	6	15	0	1.8	0.6	0.6	261800	0	0	8.19	150	14771.81	0	0
2013	6	16	0	1.8	0.6	0.6	261800	0	0	8.19	150	14613.62	0	0
2013	6	17	0	1.8	0.6	0.6	261800	0	0	8.19	150	14455.43	0	0
2013	6	18	0	1.8	0.6	0.6	261800	0	0	8.19	150	14297.24	0	0
2013	6	19	0	1.8	0.6	0.6	261800	0	0	8.19	150	14139.05	0	0
2013	6	20	0	1.8	0.6	0.6	261800	0	0	8.19	150	13980.86	0	0
2013	6	21	0	1.8	0.6	0.6	261800	0	0	8.19	150	13822.67	0	0
2013	6	22	0	1.8	0.6	0.6	261800	0	0	8.19	150	13664.48	0	0
2013	6	23	0	1.8	0.6	0.6	261800	0	0	8.19	150	13506.29	0	0
2013	6	24	0	1.8	0.6	0.6	261800	0	0	8.19	150	13348.1	0	0
2013	6	25	7.4	1.8	0.6	0.6	261800	0	1162.392	8.19	150	14352.302	0	1
2013	6	26	0	1.8	0.6	0.6	261800	0	0	8.19	150	14194.112	0	0
2013	6	27	0	1.8	0.6	0.6	261800	0	0	8.19	150	14035.922	0	0
2013	6	28	16.2	1.8	0.6	0.6	261800	0	2544.696	8.19	150	14930	0	1
2013	6	29	1	1.8	0.6	0.6	261800	0	157.08	8.19	150	14928.89	0	1
2013	6	30	0	1.8	0.6	0.6	261800	0	0	8.19	150	14770.7	0	0
2013	7	1	0	1.8	0.6	0.6	261800	0	0	8.19	150	14612.51	0	0
2013	7	2	0	1.8	0.6	0.6	261800	0	0	8.19	150	14454.32	0	0
2013	7	3	0	1.8	0.6	0.6	261800	0	0	8.19	150	14296.13	0	0
2013	7	4	0	1.8	0.6	0.6	261800	0	0	8.19	150	14137.94	0	0
2013	7	5	0	1.8	0.6	0.6	261800	0	0	8.19	150	13979.75	0	0
2013	7	6	0	1.8	0.6	0.6	261800	0	0	8.19	150	13821.56	0	0
2013	7	7	0	1.8	0.6	0.6	261800	0	0	8.19	150	13663.37	0	0
2013	7	8	0	1.8	0.6	0.6	261800	0	0	8.19	150	13505.18	0	0
2013	7	9	0	1.8	0.6	0.6	261800	0	0	8.19	150	13346.99	0	0
2013	7	10	0	1.8	0.6	0.6	261800	0	0	8.19	150	13188.8	0	0
2013	7	11	5.6	1.8	0.6	0.6	261800	0	879.648	8.19	150	13910.258	0	0
2013	7	12	0	1.8	0.6	0.6	261800	0	0	8.19	150	13752.068	0	0
2013	7	13	0	1.8	0.6	0.6	261800	0	0	8.19	150	13593.878	0	0
2013	7	14	0	1.8	0.6	0.6	261800	0	0	8.19	150	13435.688	0	0
2013	7	15	0	1.8	0.6	0.6	261800	0	0	8.19	150	13277.498	0	0
2013	7	16	4.4	1.8	0.6	0.6	261800	0	691.152	8.19	150	13810.46	0	0
2013	7	17	0	1.8	0.6	0.6	261800	0	0	8.19	150	13652.27	0	0
2013	7	18	0	1.8	0.6	0.6	261800	0	0	8.19	150	13494.08	0	0
2013	7	19	0	1.8	0.6	0.6	261800	0	0	8.19	150	13335.89	0	0
2013	7	20	14.2	1.8	0.6	0.6	261800	0	2230.536	8.19	150	14930	0	1
2013	7	21	0	1.8	0.6	0.6	261800	0	0	8.19	150	14771.81	0	0
2013	7	22	0	1.8	0.6	0.6	261800	0	0	8.19	150	14613.62	0	0
2013	7	23	0	1.8	0.6	0.6	261800	0	0	8.19	150	14455.43	0	0
2013	7	24	0	1.8	0.6	0.6	261800	0	0	8.19	150	14297.24	0	0
2013	7	25	0	1.8	0.6	0.6	261800	0	0	8.19	150	14139.05	0	0
2013	7	26	0	1.8	0.6	0.6	261800	0	0	8.19	150	13980.86	0	0
2013	7	27	0	1.8	0.6	0.6	261800	0	0	8.19	150	13822.67	0	0
2013	7	28	0	1.8	0.6	0.6	261800	0	0	8.19	150	13664.48	0	0
2013	7	29	0	1.8	0.6	0.6	261800	0	0	8.19	150	13506.29	0	0
2013	7	30	0	1.8	0.6	0.6	261800	0	0	8.19	150	13348.1	0	0
2013	7	31	4	1.8	0.6	0.6	261800	0	628.32	8.19	150	13818.23	0	0
2013	8	1	0	2.7	0.6	0.6	261800	0	0	12.285	150	13655.945	0	0
2013	8	2	0	2.7	0.6	0.6	261800	0	0	12.285	150	13493.66	0	0
2013	8	3	0	2.7	0.6	0.6	261800	0	0	12.285	150	13331.375	0	0
2013	8	4	0	2.7	0.6	0.6	261800	0	0	12.285	150	13169.09	0	0
2013	8	5	0	2.7	0.6	0.6	261800	0	0	12.285	150	13006.805	0	0
2013	8	6	0	2.7	0.6	0.6	261800	0	0	12.285	150	12844.52	0	0
2013	8	7	0	2.7	0.6	0.6	261800	0	0	12.285	150	12682.235	0	0
2013	8	8	1.6	2.7	0.6	0.6	261800	0	251.328	12.285	150	12771.278	0	0
2013	8	9	0	2.7	0.6	0.6	261800	0	0	12.285	150	12608.993	0	0
2013	8	10	0	2.7	0.6	0.6	261800	0	0	12.285	150	12446.708	0	0
2013	8	11	0	2.7	0.6	0.6	261800	0	0	12.285	150	12284.423	0	0
2013	8	12	0	2.7	0.6	0.6	261800	0	0	12.285	150	12122.138	0	0
2013	8	13	0	2.7	0.6	0.6	261800	0	0	12.285	150	11959.853	0	0
2013	8	14	0	2.7	0.6	0.6	261800	0	0	12.285	150	11797.568	0	0
2013	8	15	0	2.7	0.6	0.6	261800	0	0	12.285	150	11635.283	0	0
2013	8	16	0	2.7	0.6	0.6	261800	0	0	12.285	150	11472.998	0	0
2013	8	17	0	2.7	0.6	0.6	261800	0	0	12.285	150	11310.713	0	0
2013	8	18	0	2.7	0.6	0.6	261800	0	0	12.285	150	11148.428	0	0
2013	8	19	0	2.7	0.6	0.6	261800	0	0	12.285	150	10986.143	0	0
2013	8	20	0	2.7	0.6	0.6	261800	0	0	12.285	150	10823.858	0	0
2013	8	21	0	2.7	0.6	0.6	261800	0	0	12.285	150	10661.573	0	0
2013	8	22	0	2.7	0.6	0.6	261800	0	0	12.285	150	10499.288	0	0
2013	8	23	0	2.7	0.6	0.6	261800	0	0	12.285	150	10337.003	0	0
2013	8	24	0	2.7	0.6	0.6	261800	0	0	12.285	150	10174.718	0	0
2013	8	25	0	2.7	0.6	0.6	261800	0	0	12.285	150	10012.433	0	0
2013	8	26	0	2.7	0.6	0.6	261800	0	0	12.285	150	9850.148	0	0
2013	8	27	0	2.7	0.6	0.6	261800	0	0	12.285	150	9687.863	0	0
2013	8	28	0	2.7	0.6	0.6	261800	0	0	12.285	150	9525.578	0	0
2013	8	29	0	2.7	0.6	0.6	261800	0	0	12.285	150	9363.293	0	0
2013	8	30	0	2.7	0.6	0.6	261800	0	0	12.285	150	9201.008	0	0
2013	8	31	0	2.7	0.6	0.6	261800	0	0	12.285	150	9038.723	0	0
2013	9	1	0	4	0.6	0.6	261800	0	0	18.2	150	8870.523	0	0
2013	9	2	0	4	0.6	0.6	261800	0	0	18.2	150	8702.323	0	0
2013	9	3	0	4	0.6	0.6	261800	0	0	18.2	150	8534.123	0	0
2013	9	4	0	4	0.6	0.6	261800	0	0	18.2	150	8365.923	0	0
2013	9	5	0	4	0.6	0.6	261800	0	0	18.2	150	8197.723	0	0
2013	9	6	0	4	0.6	0.6	261800	0	0	18.2	150	8029.523	0	0
2013	9	7	0	4	0.6	0.6	261800	0	0	18.2	150	7861.323	0	0
2013	9	8	0	4	0.6	0.6	261800	0	0	18.2	150	7693.123	0	0
2013	9	9	0	4	0.6	0.6	261800	0	0	18.2	150	7524.923	0	0
2013	9	10	0	4	0.6	0.6	261800	0	0	18.2	150	7356.723	0	0
2013	9	11	0	4	0.6	0.6	261800	0	0	18.2	150	7188.523	0	0
2013	9	12	0	4	0.6	0.6	261800	0	0	18.2	150	7020.323	0	0
2013	9	13	0	4	0.6	0.6	261800	0	0	18.2	150	6852.123	0	0
2013	9	14	0	4	0.6	0.6	261800	0	0	18.2	150	6683.923	0	0
2013	9	15	0	4	0.6	0.6	261800	0	0	18.2	150	6515.723	0	0
2013	9	16	0	4	0.6	0.6	261800	0	0	18.2	150	6347.523	0	0

2013	9	17	18	4	0.6	0.6	261800	0	2827.44	18.2	150	9006.763	0	0
2013	9	18	8	4	0.6	0.6	261800	0	1256.64	18.2	150	10095.203	0	0
2013	9	19	0	4	0.6	0.6	261800	0	0	18.2	150	9927.003	0	0
2013	9	20	0	4	0.6	0.6	261800	0	0	18.2	150	9758.803	0	0
2013	9	21	0	4	0.6	0.6	261800	0	0	18.2	150	9590.603	0	0
2013	9	22	0	4	0.6	0.6	261800	0	0	18.2	150	9422.403	0	0
2013	9	23	0	4	0.6	0.6	261800	0	0	18.2	150	9254.203	0	0
2013	9	24	0	4	0.6	0.6	261800	0	0	18.2	150	9086.003	0	0
2013	9	25	0	4	0.6	0.6	261800	0	0	18.2	150	8917.803	0	0
2013	9	26	0	4	0.6	0.6	261800	0	0	18.2	150	8749.603	0	0
2013	9	27	0	4	0.6	0.6	261800	0	0	18.2	150	8581.403	0	0
2013	9	28	0	4	0.6	0.6	261800	0	0	18.2	150	8413.203	0	0
2013	9	29	0	4	0.6	0.6	261800	0	0	18.2	150	8245.003	0	0
2013	9	30	0	4	0.6	0.6	261800	0	0	18.2	150	8076.803	0	0
2013	10	1	0	6	0.6	0.6	261800	0	0	27.3	150	7899.503	0	0
2013	10	2	11	6	0.6	0.6	261800	0	1727.88	27.3	150	9450.083	0	0
2013	10	3	0	6	0.6	0.6	261800	0	0	27.3	150	9272.783	0	0
2013	10	4	0	6	0.6	0.6	261800	0	0	27.3	150	9095.483	0	0
2013	10	5	0	6	0.6	0.6	261800	0	0	27.3	150	8918.183	0	0
2013	10	6	0	6	0.6	0.6	261800	0	0	27.3	150	8740.883	0	0
2013	10	7	0	6	0.6	0.6	261800	0	0	27.3	150	8563.583	0	0
2013	10	8	0	6	0.6	0.6	261800	0	0	27.3	150	8386.283	0	0
2013	10	9	0	6	0.6	0.6	261800	0	0	27.3	150	8208.983	0	0
2013	10	10	0	6	0.6	0.6	261800	0	0	27.3	150	8031.683	0	0
2013	10	11	0	6	0.6	0.6	261800	0	0	27.3	150	7854.383	0	0
2013	10	12	0	6	0.6	0.6	261800	0	0	27.3	150	7677.083	0	0
2013	10	13	0	6	0.6	0.6	261800	0	0	27.3	150	7499.783	0	0
2013	10	14	0	6	0.6	0.6	261800	0	0	27.3	150	7322.483	0	0
2013	10	15	0	6	0.6	0.6	261800	0	0	27.3	150	7145.183	0	0
2013	10	16	0	6	0.6	0.6	261800	0	0	27.3	150	6967.883	0	0
2013	10	17	0	6	0.6	0.6	261800	0	0	27.3	150	6790.583	0	0
2013	10	18	0	6	0.6	0.6	261800	0	0	27.3	150	6613.283	0	0
2013	10	19	0	6	0.6	0.6	261800	0	0	27.3	150	6435.983	0	0
2013	10	20	0	6	0.6	0.6	261800	0	0	27.3	150	6258.683	0	0
2013	10	21	0	6	0.6	0.6	261800	0	0	27.3	150	6081.383	0	0
2013	10	22	0	6	0.6	0.6	261800	0	0	27.3	150	5904.083	0	0
2013	10	23	5.2	6	0.6	0.6	261800	0	816.816	27.3	150	6543.599	0	0
2013	10	24	0	6	0.6	0.6	261800	0	0	27.3	150	6366.299	0	0
2013	10	25	0	6	0.6	0.6	261800	0	0	27.3	150	6188.999	0	0
2013	10	26	0	6	0.6	0.6	261800	0	0	27.3	150	6011.699	0	0
2013	10	27	0	6	0.6	0.6	261800	0	0	27.3	150	5834.399	0	0
2013	10	28	0	6	0.6	0.6	261800	0	0	27.3	150	5657.099	0	0
2013	10	29	0	6	0.6	0.6	261800	0	0	27.3	150	5479.799	0	0
2013	10	30	0	6	0.6	0.6	261800	0	0	27.3	150	5302.499	0	0
2013	10	31	0	6	0.6	0.6	261800	0	0	27.3	150	5125.199	0	0
2013	11	1	0	8.1	0.6	0.6	261800	0	0	36.855	150	4938.344	0	0
2013	11	2	0	8.1	0.6	0.6	261800	0	0	36.855	150	4751.489	0	0
2013	11	3	0	8.1	0.6	0.6	261800	0	0	36.855	150	4564.634	0	0
2013	11	4	0	8.1	0.6	0.6	261800	0	0	36.855	150	4377.779	0	0
2013	11	5	0	8.1	0.6	0.6	261800	0	0	36.855	150	4190.924	0	0
2013	11	6	0	8.1	0.6	0.6	261800	0	0	36.855	150	4004.069	0	0
2013	11	7	0	8.1	0.6	0.6	261800	0	0	36.855	150	3817.214	0	0
2013	11	8	0	8.1	0.6	0.6	261800	0	0	36.855	150	3630.359	0	0
2013	11	9	2.2	8.1	0.6	0.6	261800	0	345.576	36.855	150	3789.08	0	0
2013	11	10	0	8.1	0.6	0.6	261800	0	0	36.855	150	3602.225	0	0
2013	11	11	0	8.1	0.6	0.6	261800	0	0	36.855	150	3415.37	0	0
2013	11	12	0	8.1	0.6	0.6	261800	0	0	36.855	150	3228.515	0	0
2013	11	13	0	8.1	0.6	0.6	261800	0	0	36.855	150	3041.66	0	0
2013	11	14	0	8.1	0.6	0.6	261800	0	0	36.855	150	2854.805	0	0
2013	11	15	0	8.1	0.6	0.6	261800	0	0	36.855	150	2667.95	0	0
2013	11	16	0	8.1	0.6	0.6	261800	0	0	36.855	150	2481.095	0	0
2013	11	17	0	8.1	0.6	0.6	261800	0	0	36.855	150	2294.24	0	0
2013	11	18	0	8.1	0.6	0.6	261800	0	0	36.855	150	2107.385	0	0
2013	11	19	0	8.1	0.6	0.6	261800	0	0	36.855	150	1920.53	0	0
2013	11	20	0	8.1	0.6	0.6	261800	0	0	36.855	150	1733.675	0	0
2013	11	21	0	8.1	0.6	0.6	261800	0	0	36.855	150	1546.82	0	0
2013	11	22	0	8.1	0.6	0.6	261800	0	0	36.855	150	1359.965	0	0
2013	11	23	0	8.1	0.6	0.6	261800	0	0	36.855	150	1173.11	0	0
2013	11	24	0	8.1	0.6	0.6	261800	0	0	36.855	150	986.255	0	0
2013	11	25	0	8.1	0.6	0.6	261800	0	0	36.855	150	799.4	0	0
2013	11	26	0	8.1	0.6	0.6	261800	0	0	36.855	150	612.545	0	0
2013	11	27	0	8.1	0.6	0.6	261800	0	0	36.855	150	425.69	0	0
2013	11	28	0	8.1	0.6	0.6	261800	0	0	36.855	150	238.835	0	0
2013	11	29	5	8.1	0.6	0.6	261800	0	785.4	36.855	150	837.38	0	0
2013	11	30	0	8.1	0.6	0.6	261800	0	0	36.855	150	650.525	0	0
2013	12	1	0	9.7	0.6	0.6	261800	0	0	44.135	150	456.39	0	0
2013	12	2	0	9.7	0.6	0.6	261800	0	0	44.135	150	262.255	0	0
2013	12	3	0	9.7	0.6	0.6	261800	0	0	44.135	150	68.12	0	0
2013	12	4	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	5	16.4	9.7	0.6	0.6	261800	0	2576.112	44.135	150	2381.977	0	0
2013	12	6	0	9.7	0.6	0.6	261800	0	0	44.135	150	2187.842	0	0
2013	12	7	0	9.7	0.6	0.6	261800	0	0	44.135	150	1993.707	0	0
2013	12	8	0	9.7	0.6	0.6	261800	0	0	44.135	150	1799.572	0	0
2013	12	9	0	9.7	0.6	0.6	261800	0	0	44.135	150	1605.437	0	0
2013	12	10	2.6	9.7	0.6	0.6	261800	0	408.408	44.135	150	1819.71	0	0
2013	12	11	0	9.7	0.6	0.6	261800	0	0	44.135	150	1625.575	0	0
2013	12	12	0	9.7	0.6	0.6	261800	0	0	44.135	150	1431.44	0	0
2013	12	13	0	9.7	0.6	0.6	261800	0	0	44.135	150	1237.305	0	0
2013	12	14	0	9.7	0.6	0.6	261800	0	0	44.135	150	1043.17	0	0
2013	12	15	0	9.7	0.6	0.6	261800	0	0	44.135	150	849.035	0	0
2013	12	16	0	9.7	0.6	0.6	261800	0	0	44.135	150	654.9	0	0
2013	12	17	0	9.7	0.6	0.6	261800	0	0	44.135	150	460.765	0	0
2013	12	18	0	9.7	0.6	0.6	261800	0	0	44.135	150	266.63	0	0
2013	12	19	0	9.7	0.6	0.6	261800	0	0	44.135	150	72.495	0	0
2013	12	20	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	21	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	22	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	23	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	24	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	25	1.4	9.7	0.6	0.6	261800	0	219.912	44.135	150	25.777	0	0
2013	12	26	3	9.7	0.6	0.6	261800	0	471.24	44.135	150	302.882	0	0
2013	12	27	0	9.7	0.6	0.6	261800	0	0	44.135	150	108.747	0	0
2013	12	28	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	29	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	30	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
2013	12	31	0	9.7	0.6	0.6	261800	0	0	44.135	150	0	1	0
									66759	9217.845	54750		11	11