



Role of the Environment Agency

- Established in 1996 to protect and improve the environment.
- Within England we're responsible for:
 - regulating major industry and waste
 - treatment of contaminated land
 - water quality and resources
 - Fisheries
 - inland river, estuary and harbour navigations
 - conservation and ecology
- We are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.
- We have offices across England divided into 14 areas



Regulators Code & Framework

Regulators' Code - provides a framework for how we should engage with our regulated customers. It is statutory guidance. The Environment Agency must have follow the code and its requirements within our regulatory work.

Growth Duty – requires us and other National Regulators to have regard to the desirability of promoting economic growth alongside our other statutory duties.

Regulatory Framework - We work within a regulatory framework which is set out by central government and relevant legislation.

Our role is to implement the regulations, we do have discretion on when, where and how to act. We use our resources to target activities and sites which pose the greatest risk and achieve the best outcomes for people and the environment

What is not part of our role

The Local Planning Authority normally decides where landfills should be located. Planning permission normally also includes:

- operating life of landfill
- Vehicle movement numbers & traffic movement on highways
- Final landform – shape / height of the completed site
- Operating hours

Local Authority have statutory duties within their authority boundaries including:

- Regulating smaller industrial processes;
- Producing local air quality management plans including monitoring and assessment;
- Statutory nuisance regulations – noise, gas, smoke, dust, odour and pests.

Any questions regarding these issues should be directed to the appropriate authority

What is not part of our role

Advice & Guidance on health

At sites we regulate we have a statutory duty to protect the environment and safeguard peoples health. However we are not qualified to give health advice

We seek advice and information from health professionals to inform any decisions. When making decisions on the risks from landfills we regulate, we consult Public Health England (PHE), formerly the Health Protection Agency (HPA) and follow their advice and guidance.

Public Health England (PHE) - agency of the Department of Health. It provides a technical support service to Government, Government bodies, local authorities and the public.

Environmental Permits

Permit allows specified activities to be carried out within a prescribed set of conditions, including emissions to air and discharges to water. There are many factors that will determine these conditions including the environmental standards set in European and national legislation

- *Walleys Quarry Landfill site* – Environmental Permit issued on the 9 June 2005 to Lafarge Aggregates Limited. Permit was transferred to Red Industries RM Limited on the 3 November 2016.
- Allows the operation of a Non Hazardous waste landfill with a separate cell for Stable Non-Reactive Hazardous Waste (gypsum and asbestos). The operator has never used a separate cell and therefore (SNRHW) are not accepted.
- The total quantity of waste allowed is currently 250,000 tonnes per year. Non Hazardous waste includes municipal and industrial wastes.
- The permit is a public register document

Activities & Monitoring



Schedule 3 – Emissions and monitoring

Table 83.1 Leachate level limits and monitoring requirements			
Monitoring point reference/Description	Limit	Monitoring frequency	Monitoring method
Leachate monitoring wells in Cells 1 and 2 as shown on drawing number 1184.06 (dated 16/08/11).	83 m AOD 2m below the level of the surrounding groundwater during the post-closure period	Monthly	As specified in Environment Agency Guidance TON22 (February 2003) or such other subsequent guidance as may be agreed in writing with the Environment Agency. Or as otherwise agreed with the Agency as part of a leachate monitoring plan.
Leachate monitoring wells in Cells 3 and 4 as shown on drawing number 1184.06 (dated 16/08/11).	1m above the surface of the basal seal during the operational phase 2m below the level of the surrounding groundwater during the post-closure period	Monthly	

Table 83.2 Point source emissions to air – emission limits and monitoring requirements						
Emission point Ref. & Location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Landfill gas engines A1, A2 and A4 as shown on Drawing 1636 V.A.R.06 (dated 12/12/2013)	Oxides of Nitrogen	Gas utilisation plant	500 mg/m ³	Hourly mean	Annually	As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency.
	CO		1400 mg/m ³			
	Total VOCs		1000 mg/m ³			
Fixed gas flare A3 as shown on Drawing 1636 V.A.R.06 (dated 12/12/2013)	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m ³	Hourly mean	Annually	As per M2 version 10, October 2004-as such other subsequent guidance as may be agreed in writing with the Environment Agency. Monitoring is unnecessary where the flare is active for <10% of the year.
	CO		50 mg/m ³			
	Total VOCs		10 mg/m ³			

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Table 83.2 Point source emissions to air – emission limits and monitoring requirements						
Emission point Ref. & Location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Habile gas flare or flares at a location to be agreed with the Agency.	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m ³	Hourly mean	Annually	As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency. Monitoring is unnecessary where the flare is active for <10% of the year.
	CO		50 mg/m ³			
	Total VOCs		10 mg/m ³			

Table 83.3 Point source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point Ref. & Location	Parameter	Source	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Discharges to the Silverdale Brook as shown in figure 12 of the working plan	Suspended Solids	surface water and groundwater discharge	50 mg/l		Monthly	Laboratory testing
	Visible oil		none visible		Daily	
	Turbidity (expressed in nephelometric turbidity units)		60		Monthly	
	pH		6-9		Monthly	
	Maximum daily volume of discharge*		4,000 cubic metres per day		Daily	
		Maximum rate of discharge*	50 litres per second 25 litres a second during flood warnings		Daily	

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Table 83.3 Point source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point Ref. & Location	Parameter	Source	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
	Ammoniacal Nitrogen expressed as		No limit set		Weekly	
Discharge 2 to an unnamed tributary of the Silverdale	Suspended Solids	Surface water and groundwater	50 mg/l		Monthly	Laboratory testing

Table 83.4 Groundwater – emission limits and monitoring requirements					
Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
Downstream groundwater monitoring point labeled as 'Pumped groundwater discharge in region – groundwater compliance point' on drawing	Ammoniacal nitrogen	0.5mg/l	Soil Sample	Quarterly	As specified in Environment Agency Guidance TON22 Monitoring of Landfill Leachate, Groundwater and Surface Water (February 2003), Horizontal Guidance Note 94 – Environmental Risk Assessment for
	Chloride	250mg/l			
	Mercury	0.0001mg/l			

Variation Application

Variation application received on 12 December 2018 to increase the permitted quantity of waste annually (January to December) from 250,000 tonnes to 300,000 tonnes

Applicant amended the application (13 May 2019) to increase annual tonnage to 400,000 tonnes

- Consultation on application between 24 May 2019 to 20 August 2019.
- Consultation on Draft “minded to issue the variation” decision commenced on 19 August 2020 for 28 days

We will only issue a permit variation if we believe that harm to the environment, people and wildlife will be minimised and that the operator has the ability to meet the conditions of the permit.

Variation Application

Completion of site – the sites planning permission issued by Staffordshire County council requires waste disposal to cease by 2026. The additional waste could enable the site to be completed sooner, by 2024 (currently waste disposal must be completed by 2026). However this is dependant on the operator accepting the additional waste requested.

Enforcement Position - While the application is being determined we allowed the operator to accept more waste in 2019 than the current permitted limit of 250,000 tonnes subject to appropriate controls. Decisions to allow temporary situations like this are made on a case by case basis in line with our regulatory remit.

Waste types

Waste types permitted at Walleys Quarry landfill.

Permit includes approx. 300 non hazardous waste types from different sources (mining, agriculture, wood processing, chemical processes, photographic industry, thermal processes, packaging, construction & demolition, human and animal healthcare, waste management facilities & municipal wastes

Banned waste

You cannot send certain waste to landfill. This includes:

- any liquid waste – including waste water but excluding sludge
- waste that would be explosive, corrosive, oxidising, flammable or highly flammable in the landfill
- infectious medical or veterinary waste
- chemical substances from research and development whose effects are not known
- whole or shredded used tyres – apart from bicycle tyres and tyres with a diameter of more than 1,400mm

Non Hazardous waste types accepted 2019

EWC Chapter	2019 (tonnes)
01 - Mine & Quarry	1259
02 - Agriculture & Food	9
03 - Furniture & Paper/Card	130
07 - Organic Chemical Processes	11
08 - Paints and Inks	97
10 - Thermal Processes	9231
11 - Metal Treatment & Coating	11
12 - Shaping Metal/Plastics	303
15 - Packaging	23
16 - Other waste from Industrial processes	1244
17 - Construction and Demolition	50911
18 - Healthcare	953
19 - Water & Waste Treatment	292653
20 - Municipal	4157

Compliance / Regulation

Compliance process checks whether operators are meeting the requirements set out in the conditions of their permit, process is risk based and planned, with the outcomes recorded on a Compliance Assessment Report (CAR) form which are public register.

Compliance assessments vary in frequency, duration, detail and complexity:

Site visits: check compliance with some permit conditions, includes odour assessments off site

Audits: More in depth inspection

Review of report & data: quarterly and annual monitoring reports, engineering reports, notifications

Procedure reviews: review of the operators procedures to ensure they are both adequate and being followed

We record all non compliances, each is given a score. There are 4 risk categories of non-compliance. They represent the severity of the reasonably foreseeable impact, or in the case of amenity conditions, the actual impact. The scores are accumulated during the compliance year and impact the annual charge the operator pays the Environment Agency for the permit.

Compliance activity at Walleys Quarry

Year	Site Visit	Audit	Procedure Review	Report / Data review	Permit Breaches
2019	21	2	1	15	11
2020 (to 1 st Sept)	10	1 (in progress)	2	8	8

Covid-19 restricted compliance assessments during March–June 2020.

Annual charge funds baseline compliance (1 x Audit, 4 x site visits, 4x Report reviews & 1x Engineering visit)

Closure of the site – Landfill is required by planning to achieve a landform. The site must be capped to the required standards to ensure future stability and management of landfill gas leachate and surface water.

After closure and final capping, the environmental permit conditions require the permit holder to complete the monitoring required by conditions and demonstrate that no pollution is occurring.

Environment Agency Air Quality Monitoring

- Study 1 - 6 July 2017 to 14 February 2018
- Study 2 - 15 January 2019 to 25 June 2019. During this study the wind was towards the monitoring location for 51.6% of the monitoring period

The ambient air monitoring team deployed a mobile monitoring facility on the grounds of Severn Trent Pumping Station on Silverdale Road, Silverdale. Walleys landfill site was at a bearing of 130° – 240° from the MMF (Figure 2.1). Additional historical landfill sites are shown in Figure 2.2.

Figure 2.1: Map of MMF Monitoring Location



Figure 2.1: Map of Walleys Quarry Landfill Site and MMF location



Monitoring reports are public register documents

Air Quality Monitoring

Continuous monitoring during both exercises – the monitors were not turned off and all data collected is reviewed within the reports.

Conclusions of Environment Agency report - Study 1

Comparison of the particulate data from the monitoring at Silverdale with the Air Quality Strategy objectives showed that the monitoring location was subject to concentrations that would meet their respective AQS objectives

The hydrogen sulphide data was compared with its World Health Organisation guidelines and was found to be within the specified health limits. Comparison of the data with the guideline for odour annoyance indicated that there were 34 instances during the monitoring period, on 11 separate days where the 30-minute average hydrogen sulphide concentration was greater than $7\mu\text{g}/\text{m}^3$. These results suggest that complaints due to odour nuisance from hydrogen sulphide could be expected for less than 1% of the monitoring period.

The highest levels of particulate were seen, not from the direction of the landfill site, but from the direction of residential properties to the south west of the monitoring site.

The highest levels of hydrogen sulphide and methane were seen, not from the direction of the landfill site, but from north of the monitoring site. Slightly lower levels were seen from the direction of the landfill site, which were thought to be emissions from the gas management compound

Air Quality Monitoring

Conclusions of Environment Agency report - Study 2

Comparison of the particulate, nitrogen dioxide and benzene data from the monitoring at Silverdale with the Air Quality Strategy objectives showed that the monitoring location was subject to concentrations that would be expected to meet their respective AQS objectives. Toluene, ethylbenzene and m&p-xylenes were found to be below their respective Environmental Assessment Levels.

The hydrogen sulphide and toluene data were compared with their respective World Health Organisation (WHO) guidelines. Toluene was found to be below the specified health and odour limits. Comparison of the hydrogen sulphide data between the 15 January 2019 and 12 February 2019 (28 days) with the WHO guidelines showed that concentrations were below health limits, but exceeded odour limits for 6% of the shorter monitoring period. Comparison of the hydrogen sulphide data between the 28 February 2019 and 25 June 2019 (118 days) with the WHO guidelines showed that concentrations were below health limits but exceeded odour limits for 1% of the monitoring period.

Consideration of the directional sources of hydrogen sulphide and methane suggested that the highest contributing sources were seen from the direction of the landfill site, alongside lower contributing sources.

Consideration of the directional sources of oxides of nitrogen suggested that the highest contributing sources were seen from the direction of the landfill site from the gas management compound, alongside lower contributing sources.

Response from Public Health England

“PHE has assessed the environmental air quality data provided by the Environment Agency (EA) (July 2017-February 2018, and January 2019-June 2019) and compared hydrogen sulphide data with the World Health Organisation (WHO) air quality health-based guideline value of 107 ppb as a 24-hour average. We note that these levels are low and would not expect there to be any long-term health consequences. However, due to the low odour threshold of hydrogen sulphide, the EA monitoring data shows a small percentage of periods of exceedance of the WHO short-term odour value of 5 ppb as a 30-minute average; therefore there will have been the potential for significant odour complaints to occur. The unpleasant odour may cause discomfort leading to transient nausea, headaches and dizziness. Odour can be a cause of stress and anxiety, even when the substances causing the odours are not harmful to health at the levels detected at these locations. In addition PHE has not received any analysis regarding site-related odour complaints related to either local meteorological conditions or on-site practices. Please also note the PHE position that living close to a well-managed landfill site does not pose a significant risk to human health

(<https://www.gov.uk/government/publications/landfill-sites-impact-on-health-from-emissions>)”.



Environment
Agency

Walleys Quarry Landfill Engineering

As wastes degrade they produce polluting substances known as leachate and landfill gas. If these substances escape in an uncontrolled manner they can cause pollution to the environment or harm to human health.

Landfills are therefore engineered to:

- Contain the waste
- Collect and treat the contaminated water generated (leachate)
- Collect gas generated within the landfill

2.5 Landfill Engineering

2.5.1 No construction of any new cell of the landfill shall commence until the operator has submitted construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.

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2.5.2 Where the operator proposes to construct any new cell other than the first cell, but proposes no change from the design of the most recently approved cell which could have any impact on the performance of any element of the design, no construction of the new cell shall commence until the operator has submitted a cell layout drawing and the Environment Agency has confirmed that it is satisfied with the cell layout drawing.

2.5.3 The construction of a new cell shall take place only in accordance with the approved construction proposals unless:

- (a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or
- (b) a change has otherwise been agreed in writing by the Environment Agency.

2.5.4 No disposal of waste shall take place in a new cell until the operator has submitted a CQA Validation Report and the Environment Agency has confirmed that it is satisfied with the CQA Validation Report.

2.5.5 No construction of landfill infrastructure shall commence until the operator has submitted relevant construction proposals or a written request to use previous construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.

2.5.6 The construction of the landfill infrastructure shall take place only in accordance with the approved construction proposals unless:

- (a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or
- (b) a change has otherwise been agreed in writing by the Environment Agency.

2.5.7 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant landfill infrastructure.

2.5.8 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.5.5 and 2.5.6 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Environment Agency as soon as practicable.

2.5.9 For the purposes of conditions 2.5.1, 2.5.2, 2.5.4 and 2.5.5, the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:

- (a) confirmed whether or not it is satisfied; or
- (b) informed the operator that it requires further information.

2.5.10 Where the Environment Agency has required further information under condition 2.5.9(b), the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:

- (a) confirmed whether or not it is satisfied; or
- (b) informed the operator that it requires further information.

Our Approach to Landfill Engineering

Desired outcomes:

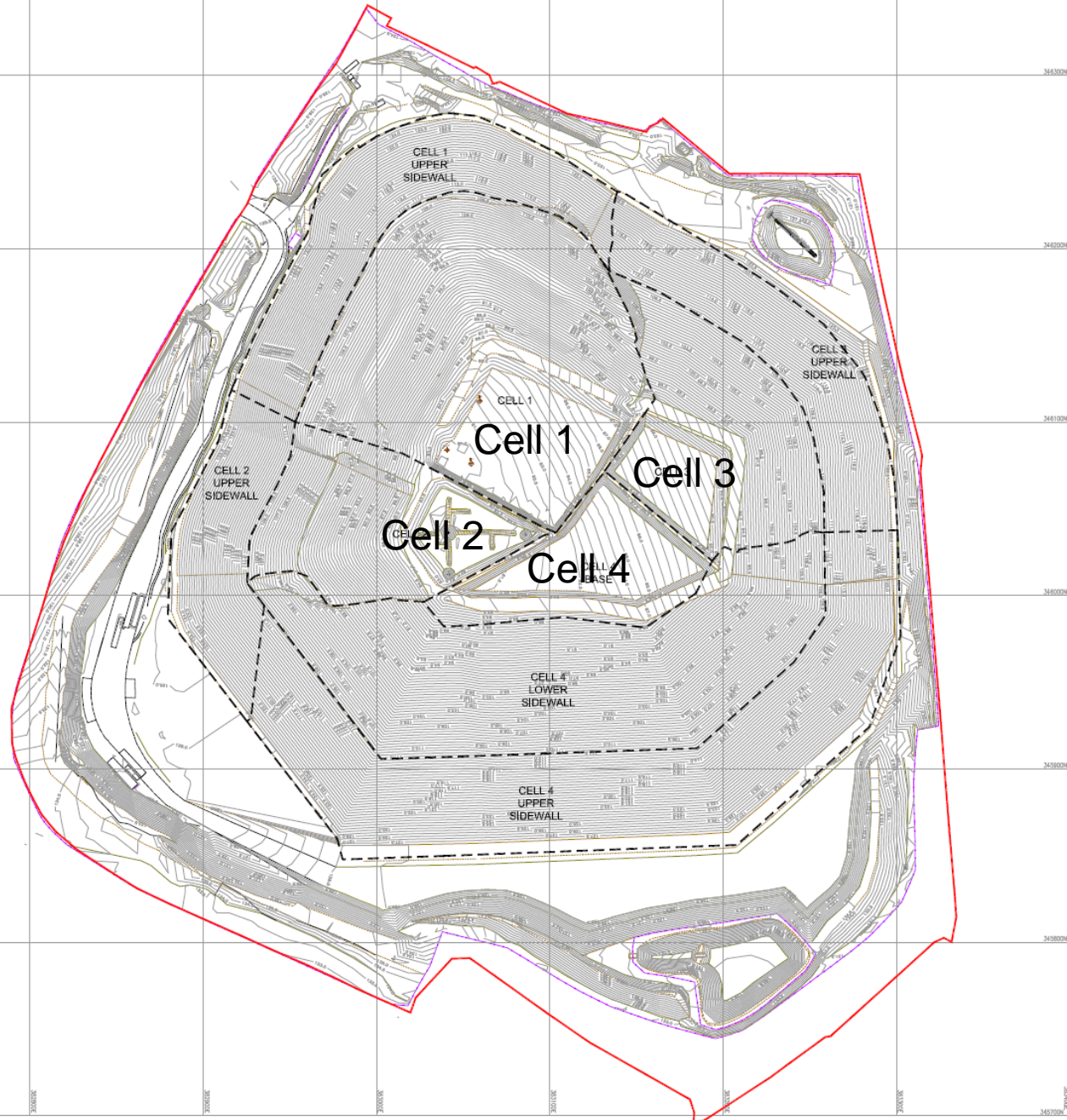
- The environment is protected by preventing uncontrolled releases of liquids and gases
- Landfills are constructed using methods and materials that are fit for purpose and will provide a stable structure with the expected levels of environmental protection over their design lives
- The construction and operation of landfills is quality assured to high standards

- Construction Quality Assurance (CQA) is a process that is used to ensure that engineering works are undertaken to a high standard
- The CQA Plan details what materials are to be used, what their specifications are and how they are to be installed and tested
- The CQA Report details how the works were undertaken and how the requirements of the specification were met
- The CQA process is overseen by an independent third party CQA Consultant (CQA Project Manager, CQA Engineer, CQA Inspector)

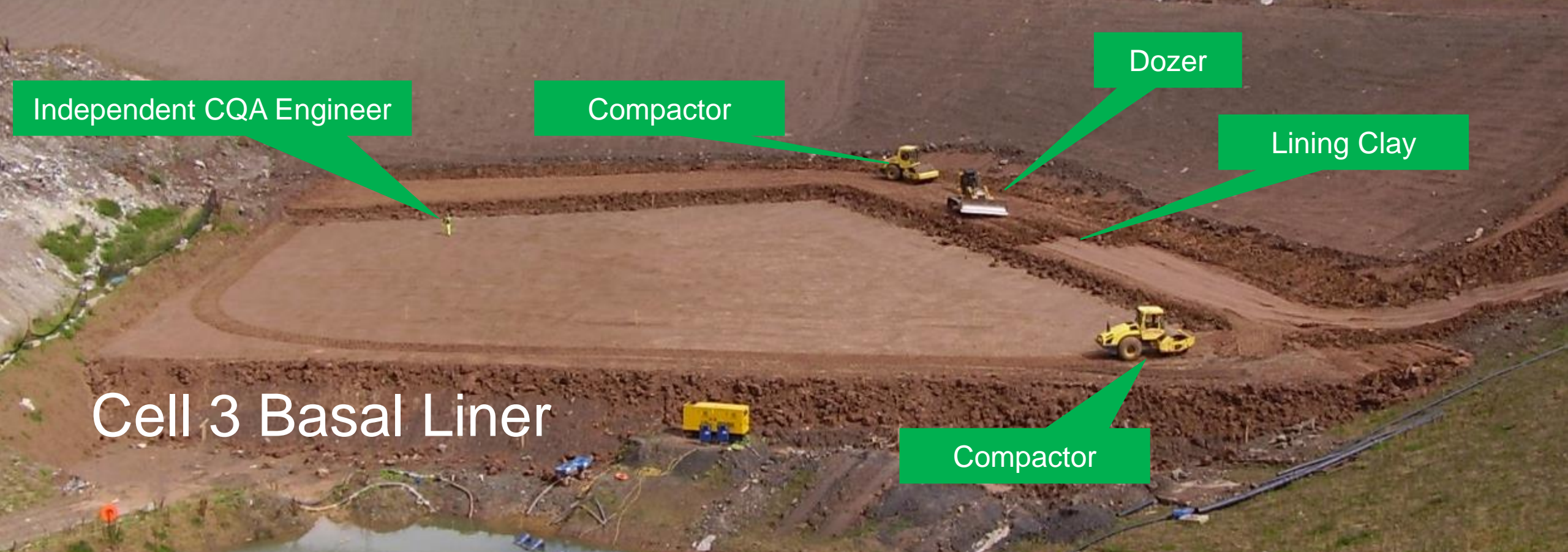
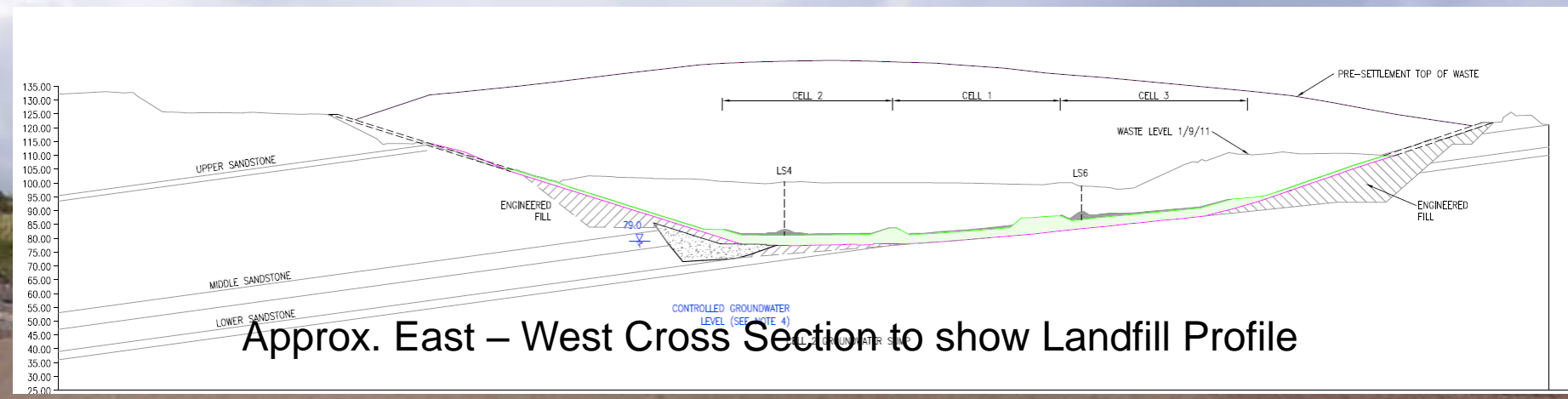
The permit requires all Construction Quality Assurance documents to be submitted to the Agency for review

- No engineering works are allowed to commence until the Agency has confirmed that it is satisfied with the construction proposals (the CQA Plan) and
- Waste cannot be tipped in a new cell until the Agency has confirmed that it is satisfied with the CQA Report.

North



- Walleys Quarry Landfill is a former clay quarry and covers an area of approximately 23.5 hectares.
- The site is divided into four distinct areas called cells which are engineered to contain the waste.
- Engineering work for landfill operations commenced in 2006 and waste was first accepted in Cell 1 in January 2007.
- Waste disposal operations have continued progressively in Cells 1, 2 and 3 with Cell 4 becoming operational in 2011.
- Waste has now been deposited in all cells to varying depths and all cells are currently operational and accepting waste.



Independent CQA Engineer

Compactor

Dozer

Lining Clay

Compactor

Cell 3 Basal Liner

Base of Cell 3

Target Pad

Leachate Drainage Aggregate

Leachate Collection Point



Leachate Treatment Plant

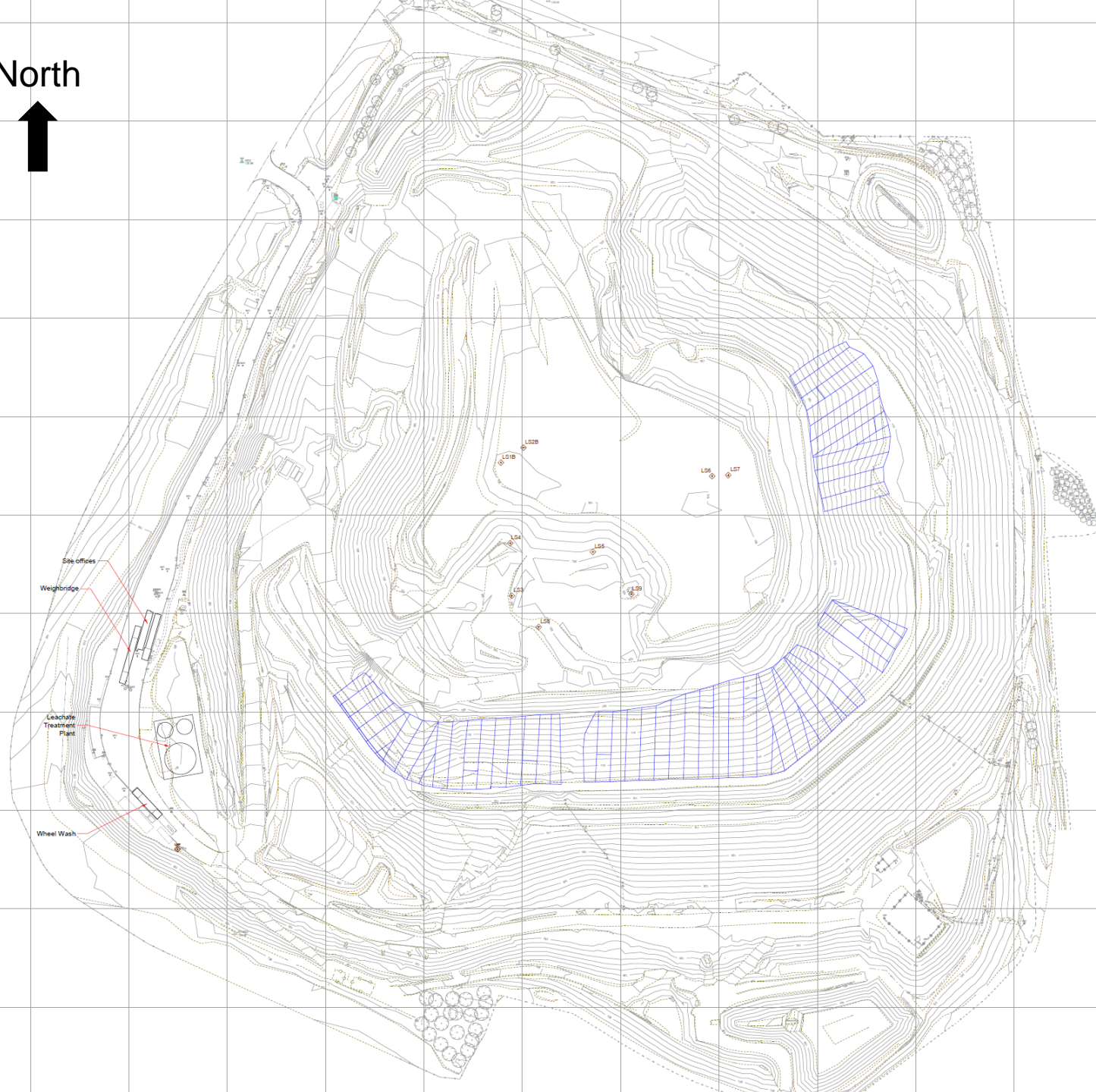


Engineered Capping

Temporary Geomembrane Capping Installed in 2019



North



Extent of Temporary
Geomembrane Capping
Installed in 2019

Landfill Gas Compound at Walleys Quarry



The gas utilisation plant at Walleys Quarry Landfill comprises:

- three modern spark ignition engines
- an enclosed high calorific gas flare with a capacity of 2000 m³/h
- a 200 m³/h mobile flare.

2.9 Landfill gas management

- 2.9.1 The operator shall take appropriate measures, including, but not limited to, those specified in any approved landfill gas management plan, to:
- (a) collect landfill gas; and
 - (b) control the migration of landfill gas.
- 2.9.2 The operator shall use the collected landfill gas to produce energy. If the collected landfill gas cannot be used to produce energy, the operator shall use appropriate measures to flare or treat the gas in accordance with an approved landfill gas management plan.
- 2.9.3 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a revised landfill gas management plan;
 - (b) implement the revised landfill gas management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

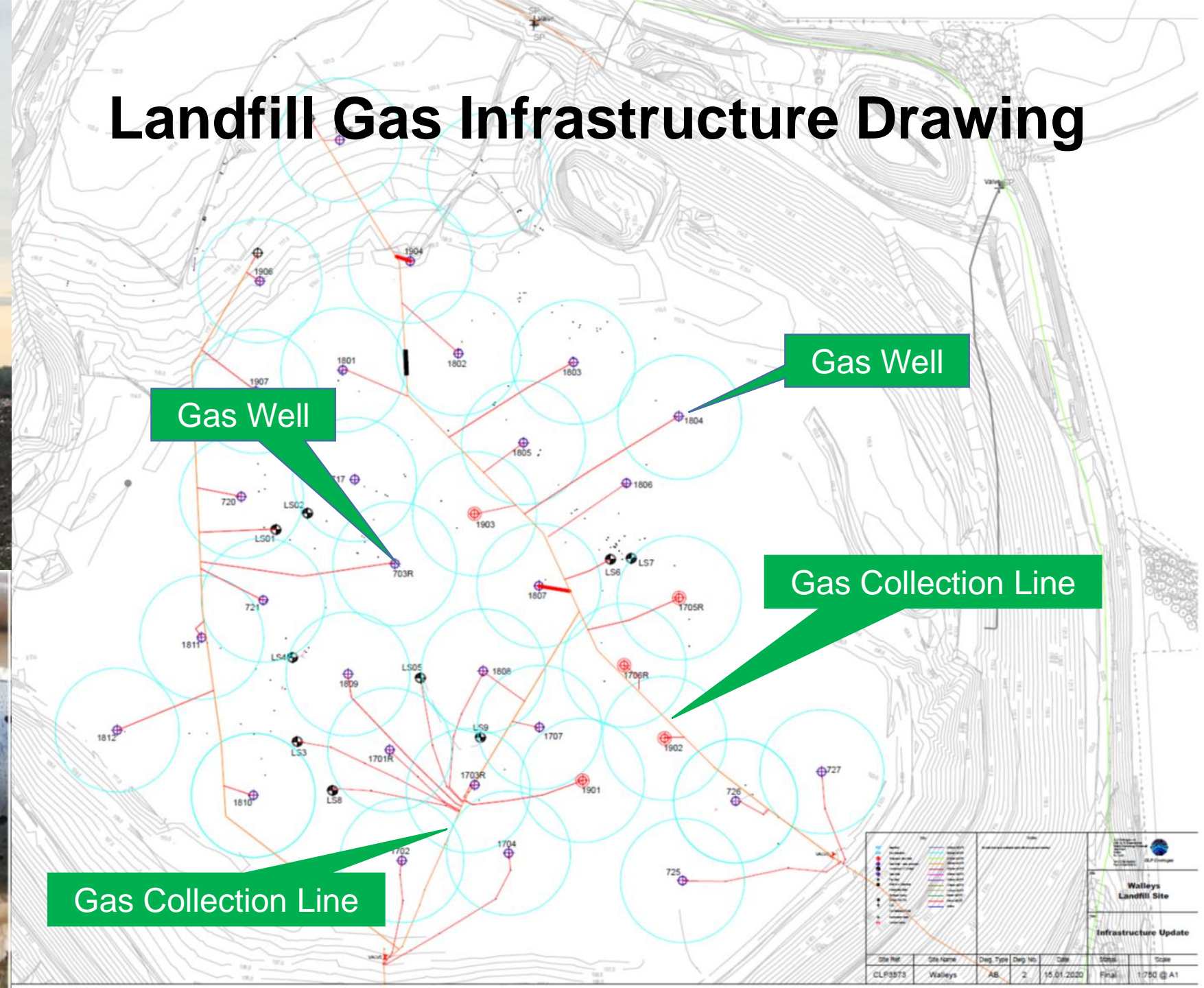


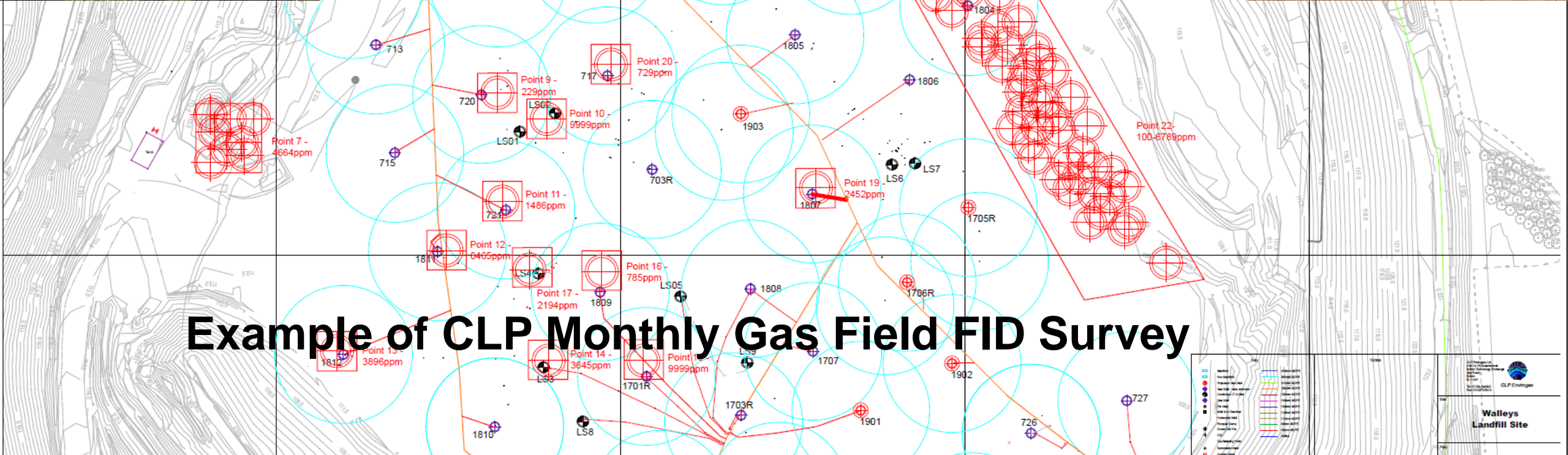
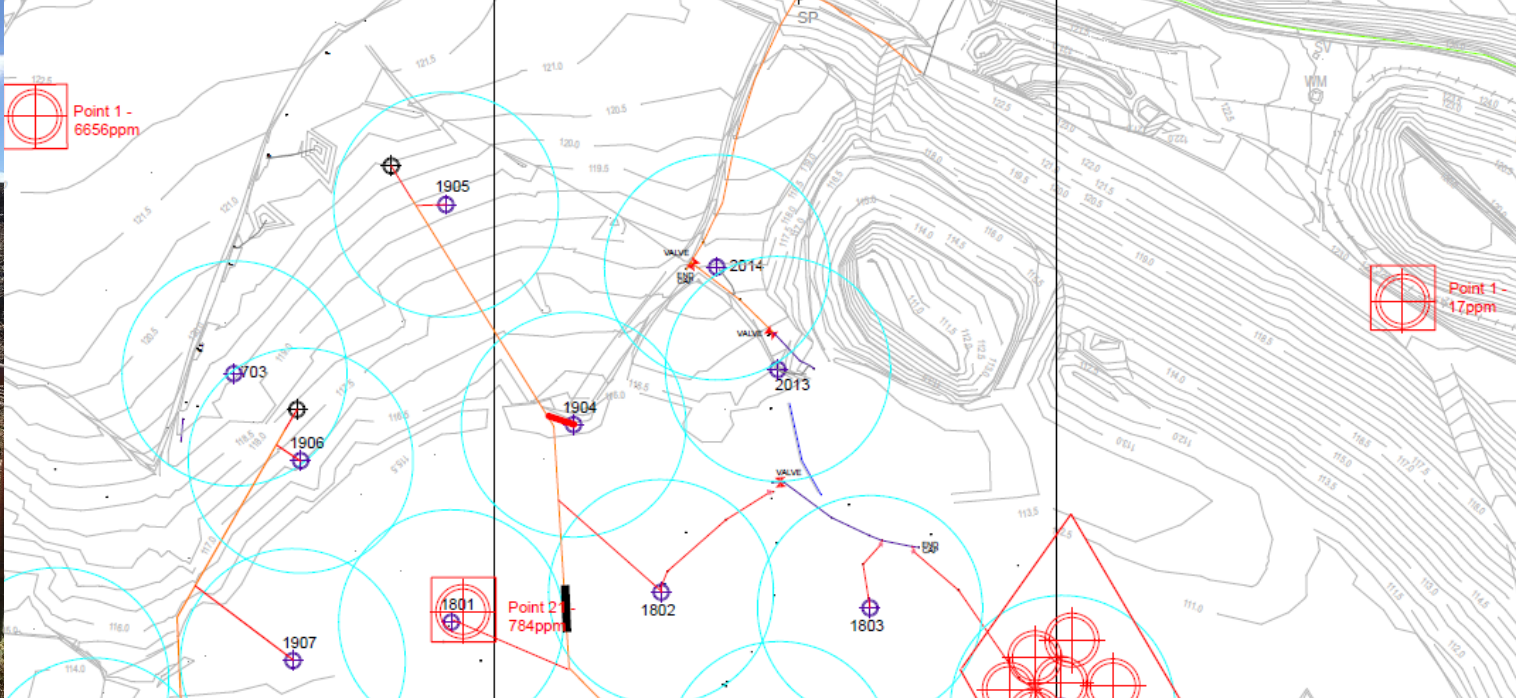
Drilling Rig Installing New Gas Wells



Gas Collection Pipe

Landfill Gas Infrastructure Drawing






Example of CLP Monthly Gas Field FID Survey

Legend and site information including a color-coded key for various markers and the logo for Walleys Landfill Site CLP Emergent.

MONTHLY GAS FIELD MONITORING SHEET

CLP ENVIROGAS

Site:		Walleys						Weather Conditions:						Overcast								
Date:																						
Name:		GA5000						Temperature °C:						12								
Equipment Used :		G506634						Total Gas Flow m ³ /h:						2680								
Serial No :		18/03/2020						Total Power Setting kW:						2130kw + Large Flare								
Last Calibration Date :		07/09/2020																				
Calibration Due Date :																						

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			17	18	19	20	21
ID	Date/Time	CH ₄ %	CO ₂ %	O ₂ %	BALANCE %	RESIDUAL NITROGEN %	RELATIVE PRESSURE mb	ATMOSPHERIC PRESSURE mb	CO ppm	H ₂ S ppm	VELOCITY m/s	FLOW m ³ /h	METHANE FLOW m ³ /hr	VALVE POSITION %	COMMENTS	WEATHER	TECHNICIANS NAME	STATION LOAD kW	ENGINES ONLINE	FLARES ONLINE		
COMPOUND	02/03/2020 08:35	56.2	43	0.6	0.2	0	-110.8	973	56	1585	11.6	2562	1439.8	100				2130	2			
WALGW726	03/03/2020 10:09	72.8	25.2	0.6	1.3	0	-83.1	986	78	521	0.8	7	5	10		Overcast		2130	2			
WALL1902	03/03/2020 10:12	54.2	39.5	0.4	5.8	4.2	-68.3	984	29	669	18.6	159.3	86.5	70		Overcast		2130	2			
WAL1706R	03/03/2020 10:17	62	44.5	0.5	0	0	-44.3	0	87	594	27	231.6	143.5	80		Overcast		2130	2			
WAL1705R	03/03/2020 10:20	48.4	38.5	2	11	3.4	-21.3	984	65	334	12.1	104.8	50.7	30		Overcast		2130	2			
WALL1807	03/03/2020 10:23	64.5	43.5	0.5	0	0	-77.5	984	54	209	8.5	72.6	46.8	90		Overcast		2130	2			
WAL_LW06	03/03/2020 10:26	17.7	11.1	15.1	55.7	0	-0.4	984	34	153	2.7	23.8	4.2	5		Overcast		2130	2			
WALLPN12	03/03/2020 10:28	40.5	44.5	0.5	14.3	12.5	-0.4	984	78	1946	0.1	1.1	0.4	10		Overcast		2130	2			
WALLPN01	03/03/2020 10:30	57.7	42.9	0.3	0	0	-4.6	984	65	941	3.5	0	0	10		Overcast		2130	2			
WALL1806	03/03/2020 10:32	66	42.2	0.4	0	0	-79.6	984	88	231	4.5	39.4	26	70		Overcast		2130	2			
WALL1804	03/03/2020 10:34	70.5	40.5	0.3	0	0	-71.9	984	67	266	0	0	0	20		Overcast		2130	2			
WALLPN02	03/03/2020 10:36	59.7	49.2	0.4	0	0	-2.6	984	77	696	0	0	0	10		Overcast		2130	2			
WALLPN03	03/03/2020 10:37	62.5	46.2	0.5	0	0	-68.9	984	87	776	2	0	0	10		Overcast		2130	2			
WALL1805	03/03/2020 10:39	66.8	43.5	0.5	0	0	-77.4	984	84	224	10.8	93.9	62.7	80		Overcast		2130	2			
WALL1903	03/03/2020 10:44	50	38.7	2.5	8.6	0	-0.5	984	43	101	0	0	0	5		Overcast		2130	2			
WALLPN04	03/03/2020 10:46	49	41.4	1.6	7.9	1.8	-6	985	62	538	1.2	0	0	10		Overcast		2130	2			
WALLPN13	03/03/2020 10:48	54.9	40.7	0.4	4	2.4	-3.4	984	76	926	0.4	3.7	2	10		Overcast		2130	2			
WALL1802	03/03/2020 10:49	63.9	42.5	0.3	0	0	-79.4	985	32	265	7	60	38.3	90		Overcast		2130	2			
WALL1904	03/03/2020 10:52	53.4	42.7	0.5	3.4	1.5	-41.3	984	37	329	14.8	127.9	68.2	50		Overcast		2130	2			
WALL1905	03/03/2020 10:55	44.5	38.2	0.5	16.6	14.7	-62.7	985	41	441	7.5	64	28.5	50		Overcast		2130	2			
WALL2005	03/03/2020 10:58	50.5	37.5	0.4	11.5	9.9	-11.9	985	18	37	8.3	72.4	36.5	20		Overcast		2130	2			
WALL2004	03/03/2020 10:59	48.5	41.5	0.4	9.3	7.8	-9.6	985	21	177	10.1	87.5	42.5	30		Overcast		2130	2			
WALL2003	03/03/2020 11:02	69.5	46	0.4	0	0	-13.8	985	41	385	13.6	116.5	81	30		Overcast		2130	2			
WALL2002	03/03/2020 11:04	53	39.2	0.5	7	5.2	-21.2	985	15	179	15.8	135.6	72	40		Overcast		2130	2			
WALL1906	03/03/2020 11:06	46.5	37.7	0.3	15.5	14.3	-33.6	985	15	171	24.3	209.5	97.4	60		Overcast		2130	2			
WALL1907	03/03/2020 11:08	63.5	45	0.5	0	0	-50.3	985	54	324	25.6	220.1	139.9	100		Overcast		2130	2			
WALGW720	03/03/2020 11:12	70.4	43.5	0.1	0	0	-72.3	985	64	204	6.3	53.7	37.8	90		Overcast		2130	2			
WAL_LW01	03/03/2020 11:14	68	38.2	0.4	0	0	-73.9	985	43	70	2.7	25.1	17	20		Overcast		2130	2			
WALL703R	03/03/2020 11:15	67	44.9	0.3	0	0	-59.2	985	32	185	10.5	90	60.2	50		Overcast		2130	2			
WALLPN17	03/03/2020 11:17	52.2	40.5	0.6	6.5	4.3	-3.9	985	67	593	0.6	5.3	2.7	10		Overcast		2130	2			
WALGW721	03/03/2020 11:20	66.4	38.7	0.4	0	0	-73	985	38	42	1.6	14	9.2	20		Overcast		2130	2			
WALLPN18	03/03/2020 11:22	34.7	32.5	0.6	32	29.8	-0.6	985	56	538	0	0	0	10		Overcast		2130	2			
WALLPN19	03/03/2020 11:23	0.3	0.2	21.1	78.4	0	-0.3	985	42	195	0	0	0	0		Overcast		2130	2			
WALL1811	03/03/2020 11:25	64.9	41	0.4	0	0	-72	985	27	162	2.5	22	14.2	30		Overcast		2130	2			
WALL2001	03/03/2020 11:27	67.8	40.5	0.4	0	0	-24.7	985	32	203	18	154.3	104.6	40		Overcast		2130	2			
WALLPN20	03/03/2020 11:29	49.7	39.5	0.6	9.8	7.2	-14.9	985	52	404	0	0	0	10		Overcast		2130	2			
WALL1810	03/03/2020 11:31	62.7	41.7	0.4	0	0	-57.2	985	34	384	21.2	182.3	114.5	80		Overcast		2130	2			
WALL1808	03/03/2020 11:34	57.7	44	0.3	0	0	-51.5	985	18	178	7.9	67.5	39	40		Overcast		2130	2			
WALL703R	03/03/2020 11:36	54	39.7	0.5	5.5	3.7	-59.1	985	28	132	19.5	167.1	90.4	60		Overcast		2130	2			
WALL1901	03/03/2020 11:38	60.5	41.7	0.4	0	0	-41.7	985	43	612	0	0	0	30		Overcast		2130	2			
WALLPN21	03/03/2020 11:40	48.7	45	0.6	5.5	2.8	-0.2	986	67	541	0	0	0	10		Overcast		2130	2			
WAL_LW05	03/03/2020 11:42	7.9	4.8	19.2	68	0	-0.9	986	75	71	0	0	0	5		Overcast		2130	2			
WALL1701R	03/03/2020 11:43	56.5	45.4	0.4	0	0	-75.8	986	89	399	9.3	80.9	45.7	80		Overcast		2130	2			
WALL1809	03/03/2020 11:45	59.2	41.2	0.5	0	0	-75.6	986	65	322	7.5	64.9	38.4	70		Overcast		2130	2			
WAL01702	03/03/2020 11:51	0.8	1	20	78	2.5	-6.7	986	80	94	0	0	0	0		Overcast		2130	2			
WAL01704	03/03/2020 11:51	0.3	0.3	21.2	78	0	-0.2	987	53	41	0	0	0	0		Overcast		2130	2			
WALL2005	03/03/2020 13:34	49.9	37	0.3	12.6	11.5	-12	987	64	70	8.6	74.1	37	40		Overcast		2130	2			
WALL2003	03/03/2020 13:37	68.1	45.5	0.3	0	0	-13.7	987	98	314	15	128.6	87.7	50		Overcast		2130	2			
WALL2001	03/03/2020 13:41	67.3	40.2	0	0	0	-24.6	987	43	222	19.5	167.3	112.5	50		Overcast		2130	2			

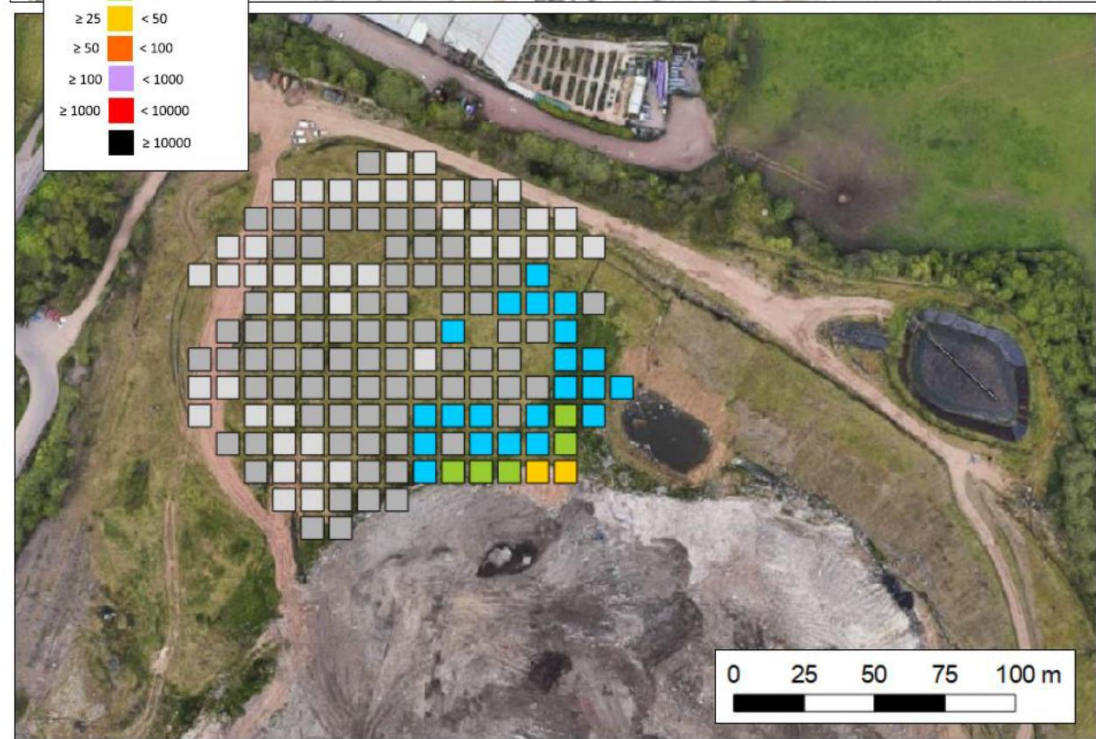
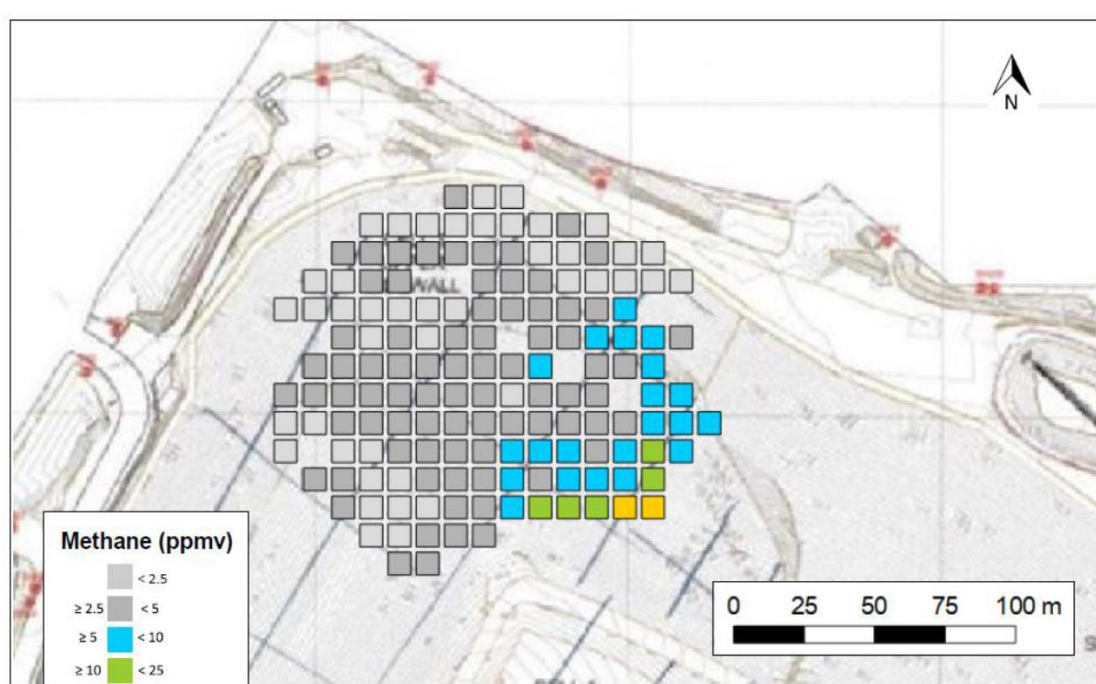


Table S3.8 Landfill gas emissions from capped surfaces for cells that have accepted non hazardous biodegradable waste – monitoring requirements

Monitoring point Ref. /description	Parameter	Monitoring frequency	Monitoring Standard or method
Permanently capped zone	Methane concentration	Every 12 months	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Temporarily capped zone	Methane concentration	Every 12 months	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Whole site	Total methane emission	As agreed with the Environment Agency	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.

Permit number
EPR/BR0677/T

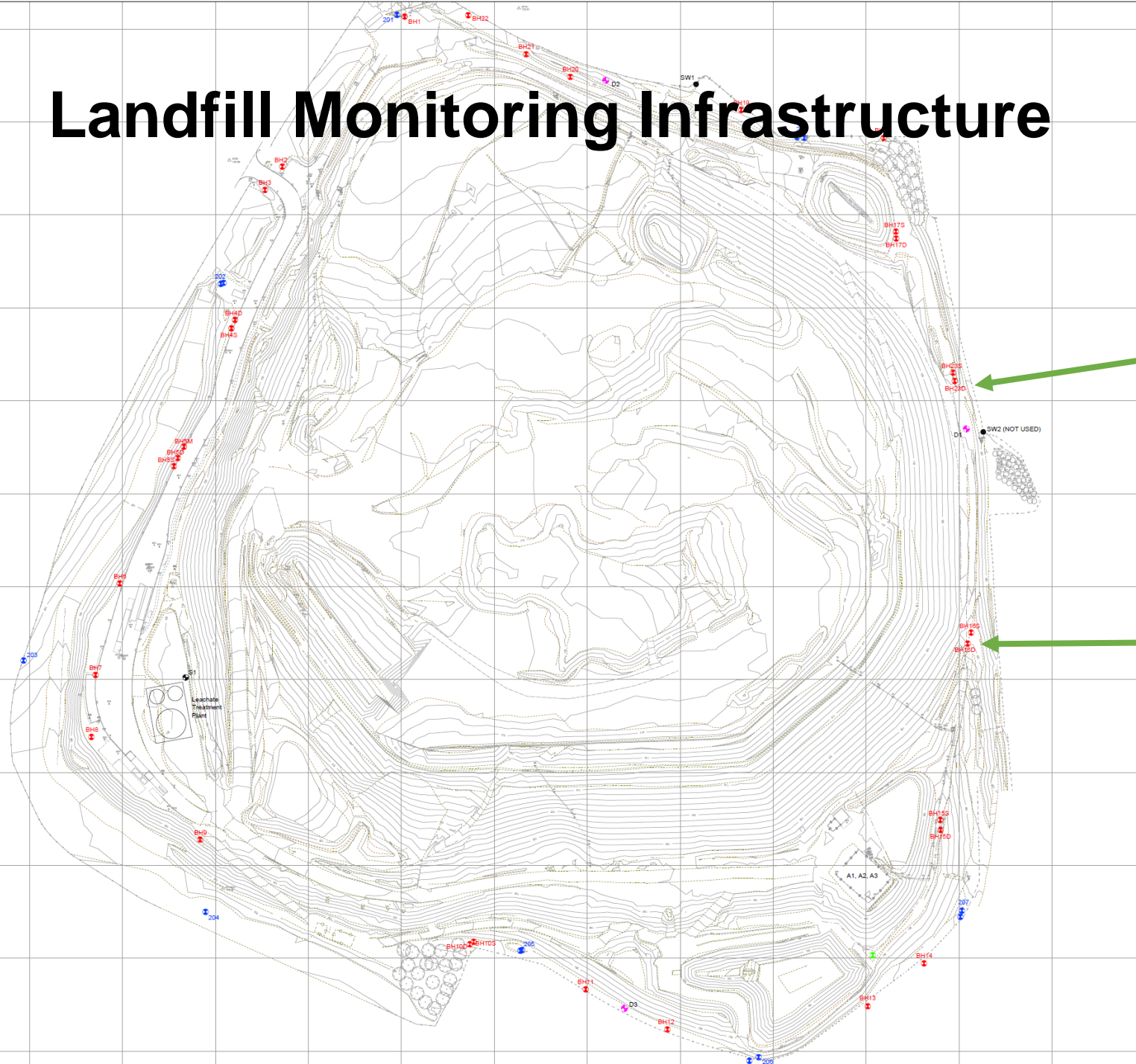
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Table S3.8 Landfill gas emissions from capped surfaces for cells that have accepted non hazardous biodegradable waste – monitoring requirements

Monitoring point Ref. /description	Parameter	Monitoring frequency	Monitoring Standard or method
Uncapped areas	Methane concentration	Every 12 months	As agreed with the Environment Agency based on the wording of revised LFTGN 07 or landfill sector guidance or such other subsequent guidance as may be agreed in writing with the Environment Agency.

Surface Emissions Monitoring

Landfill Monitoring Infrastructure



- Notes
1. Survey information provided by Red Industries Limited.
 2. All levels in metres Above Ordnance Datum Newlyn.
 3. Do not scale from this drawing.
 4. Any anomalies on this drawing should be brought to the attention of Egniol Environmental Ltd.
 5. Key

- Existing gas monitoring borehole.
- Existing groundwater monitoring borehole.
- Surface water monitoring point.
- Dust monitoring point.
- Groundwater compliance point.
- Emission point to sewer.



Monitoring Borehole

Monitoring Borehole

A	BH9 Added	JB	DW	DW	13/03/20
Rev	Modification	By	Chk	App	Date

Red Industries Ltd.

Walleys Quarry Landfill Site

Monitoring 7 Extraction Point Plan
Part 2: External Points

Drawn by	Checked by	Approved by
GJR	AC	AC
Date	Scale @ A1	Revision
24.01.2017	1:1000	A

Status: **Final**

Drawing Number: 5883.GA.D03



Engineering for Odour Control

Controlling emissions of landfill gas from:

- lateral migration
- active tipping area
- uncapped active cells
- capped areas
- leaks & failures in gas collection system



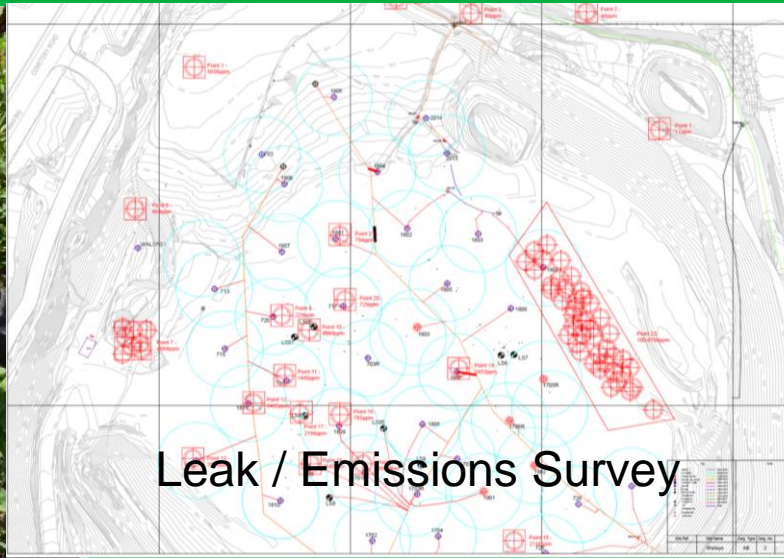
Temporary Capping



Walleys Gas Utilisation Plant



Air tight / sealed leachate wells



Leak / Emissions Survey



Well covered temporary waste flanks

Amenity Nuisance Issues

Environment Agency Officers carry out regular odour monitoring tours in the vicinity of Walleys Quarry landfill site, the monitoring tours can be undertaken at any time of the day ranging from early in the morning to late at night. Since July 2020 we have completed 18 odour tours and detected odours during on 11 occasions but not at a level to be in breach of the permit.

When Officers undertake odour tours they also record whether there are issues with:

- Mud on the Road
- Whether there is any dust nuisance from the landfill.
- They record whether there birds flying above the site or perching on adjacent buildings
- The Environmental Permit requires the site operator to use management systems to prevent or at least minimise environmental impact from the site regarding the above potential nuisance issues

Odour Monitoring Tours

- Odour tours are conducted at a number of locations, and we take into account recent complaints to ensure these locations are included in the tour.
- When officers have detected landfill type odours during a tour they record the type of odour, for example whether its a gassy smell or a smell of fresh or rotting waste. The officer gives it an odour strength rating ranging from 0:No odour to 6: Extremely strong odour.
- As part of our odour assessment work the Agency has also undertaken on site monitoring with a portable hand held laser, a Geotech TDL 500. The laser is specifically calibrated to detect methane, rather than general flammable gases, at parts per million levels. This meter helps us determine whether landfill gas, escaping from the site could be causing a odour..

Odour Tours continued:

- The Officer also records the location of the odour, wind direction, weather conditions and whether the odour is constant or intermittent
- The TDL Monitor



Odour Tours during Covid 19

- During the Covid 19 period the Environment Agency continued to carry out odour tours. We carry out the tours strictly in line with Government Covid19 guidance.
- Our odour tours are determined by the location and frequency of the complaints, and after the tour the Environment Agency contacts the Walleys Quarry landfill site operator with the findings. Officers can also visit the site after a tour to meet the operator.
- The Environment Agency requires the operator to manage odours on site in accordance with its 'Odour Management Plan, which requires the operator to carry out investigations into any odour we detected during the odour tour, and report back to us.
- The operator is required to use Best Available Technique (BAT) to manage the site to ensure that its waste operations on site prevent or at least minimise odour potential.

Working with Partner Organisations

The Environment Agency shares the information it gathers from Odour Tours with other partner organisations, for example; when Officers detect a non-landfill type odour they inform Newcastle-under-Lyme Borough Council, this allows them to carry their own investigation in the area.

The Environment Agency hold regular telecoms with its partner organisations and we attend and inform others at site liaison meetings.

We continually review and update information through Community Links and on SharePoint to ensure that our customers receive up-to-date information. Where appropriate the Environment Agency can also distribute information via email and post to its customers.

Odour tours are Important

Odour tours allow the Environment Agency as a regulator to gather information on odours in the vicinity of Walleys Quarry landfill site and to ensure that the site operator complies with its Environment Permit.

It is important that our customers report any odours that affect their daily lives by using the Environment Agency incident Hotline 0800 807060.

With all complaints the Environment Agency will provide feedback to complainants who request it. We never give away complainants details.

As Covid 19 restrictions are eased, and where appropriate the Environment Agency intends to resume offering to meet complainants face to face at the earliest opportunity, at the location of the odour complaint to assess impact.

Mud on the Highway

- All landfill sites have the potential to cause nuisance with vehicles using the site leaving mud deposits at the site entrance and on the highway. At Walleys Quarry there are a number of measures in place to minimise nuisance from mud and comply with the requirements of the permit
- Vehicles using the site must go through the wheel wash facility before leaving the site.



Mud on the Highway continued:

- The site has a long exit road which helps dry vehicles after they have been through the wheel wash, before they leave the site.



Mud on the Highway continued:

The use of the concrete waste transfer unloading pad also minimises vehicles travelling on muddy site roads.



The operator uses a road sweeper to keep the site entrance and adjacent highway clean.



Dust Nuisance:

- The operator is required to know when potentially dusty waste loads arrive on site. This enables the operator to handle dusty loads to specifically minimise nuisance.
- Dusty waste is carefully handled and covered over as quickly as possible.
- The operator uses an onsite water bowser to damp down dust on site roads and the working area during dry weather.
- Vehicle speed restrictions are used on site to minimise dust disturbance from vehicle movements.

Nuisance from Birds

During the operational life of the Walleys Quarry landfill site, the Environment Agency has received public complaints regarding birds from the site, usually gulls.

- The operator is required to deploy the method detailed in its Pest Management Plan, to deter birds staying on site, and scavenging on the waste.
- We accept that birds can cause nuisance to surrounding properties, by flying over buildings, perching on house roofs and can cause fouling nuisance to buildings, pavements and cars.
- The Environment Agency works with its partner organisations, to help achieve a co-ordinate approach for bird control, to minimise nuisance off site.

Nuisance from Birds cont:

Current bird control measure used on the site include the use of 'bangers', birds of prey and ensuring that waste is properly covered as quickly as possible.

The operator varies control measures to stop the birds becoming familiar with the control techniques.

In June 2020 the Environment Agency carried out an audit review of the operators management system procedures used to control birds on site.

We produced an inspection report which made a number of recommendations to further improve bird control measure on the Walleys Quarry landfill site. The operator has incorporated these recommendations into their procedures



Incident Reporting

The Environment Agency takes each incident report it receives very seriously and we will investigate incidents reports as a regulator to achieve the best outcome.

It is important that our customers contact us on the Environment Agency free phone Incident Hotline (**0800 807060**) as soon as they experience odours that effect their daily lives, this helps us make the right response.

The Incident Hotline operates 24 hours a day, 7 days a week. We always request that reports are made to the incident line and not directly to an Environment Agency Officer. This ensures that they are picked up when the site Officer is on leave or out of the office for example

Incidents Reporting cont:

The incident reporter can request feedback, which when requested will usually be provided within 10 days. If feedback is not requested we do not usually contact the incident reportere.

Reports received on our Incident Hotline are passes to the Duty Officer within 30 minutes. The only exception ito this is overnight, when odour complaints are normally passed to an Officer in the morning.

The operator is informed about all incident reports, but we don't release personal data so they cannot identify the reporters.

The operator is required to investigate the incident reports and to advise us of any resulting changes to their operations.

Communication & Engagement

- Attend liaison meeting (quarterly)
- Community Newsletter – distributed to members of public
- Citizen space information page – external web page
- Landfill Frequently Asked Questions (FAQ's)
- Respond to written enquiries, request for information and complaints (email Enquiries_Westmids@environment-agency.gov.uk)

Walley's Quarry Landfill Site, Cemetery Road, Silverdale, Newcastle under Lyme ST56DH

Overview

Walley's Quarry Landfill Site, Cemetery Road, Silverdale, Newcastle under Lyme ST56DH

Coronavirus: The Environment Agency response

We are working hard with Government and other emergency responders on protecting the public and the environment from the effects of Coronavirus. The Environment Agency remains fully operational, with the majority of our staff working from home. We continue to carry out regulatory visits to sites that could cause serious environmental harm where required. However, we are reducing regulatory visits to other sites and review how best to regulate them in accordance with the Government guidance.

Site Details

The Environment Agency regulates two environmental permits held by Red Industries to operate a waste facility at Walleys Quarry. One permit for the landfill site and one permit for the soil treatment facility.

Walleys Quarry Landfill site - We issued an Environmental Permit for Walleys Quarry's Landfill site on 9 June 2005 to Lafarge Aggregates Limited. The permit was transferred to Red Industries RM Limited on 3 November 2016.

Closes 3 Feb 2021

Opened 3 Feb 2020

Contact

Engagement_WestMids@environment-agency.gov.uk

- <https://consult.environment-agency.gov.uk/west-midlands/walleys-quarry-landfill-silverdale/>