



ANNUAL ENVIRONMENTAL REPORT

Galco Steel Ltd.
Ballymount Road,
Walkinstown,
Dublin 12

P0284-02

JANUARY 2018 TO DECEMBER 2018

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1.0 INTRODUCTION

Galco Steel Limited was founded in 1967 by the Quinn family with the purpose of manufacturing and galvanizing a range of products. Through the years the focus has changed and the company saw a need to provide a comprehensive galvanizing service.

In 1970 the first commercial galvanizing plant was built by Galco which has become the main source of business to date. The fabrication plant continues to manufacture access covers and water storage tanks for the building industry.

Galco Steel Ltd. has continued to expand throughout the years and in 1991 the company decided to improve the quality of service to its customers by embarking on an expansion and re-structuring programme. This increased the size of the plant giving it a greater capacity to meet the customers' needs.

Situated on one of the main industrial routes of South Dublin, Galco Steel Ltd. is fronted by Ballymount Road that is used by both cars and heavy goods vehicles on a 24-hour basis. Ballymount Avenue is to one side of the plant that leads to the Ballymount Recycling Station, this station has numerous heavy goods vehicles entering and leaving on a regular basis and beyond this road there are a number of Industrial estates. To the rear of the plant there is an undeveloped grass area of approximately 7.5 hectares, the plant itself occupies approximately 3 hectares. The left of the site is occupied by an Industrial Estate. Numerous large and small industrial units and the very busy main road dominate the general environment of the plant.

Galco Steel Ltd. employs 105 people.

1.1 Site Contact Details

Galco Steel Ltd.,
Ballymount Road,
Walkinstown,
Dublin 12
Telephone 01-4247000

1.2 Activities Licensed

Galco Steel Ltd., under Section 88(2) of the said Act is licensed to conduct “the production, recovery or processing of non-ferrous metals, their compounds or other alloys including antimony, arsenic, beryllium, chromium, lead, magnesium, manganese, phosphorus, selenium, cadmium, or mercury, by thermal, chemical, or electrolytic means in installations with a batch capacity exceeding 0.5 tonnes”.

1.3 Process Description

The main purpose of the activities at the installation is the immersion of steel articles in molten zinc to apply a protective coating. All material processed by Galco Steel Ltd. is in accordance with I.S. EN ISO 1461: 1999.

- Receiving, Storage and Handling of Raw Materials - All deliveries of materials take place during daytime hours. All storage areas are on an impermeable hard concrete standing to prevent pathways to ground water receptors.
- Pre-treatment and Degreasing – The iron or steel is inspected prior to galvanising to determine whether there is any pre-treatment required, (such as degreasing, etc.). The galvanising reaction only occurs on a chemically clean surface. Like most coating processes, the secret to achieving a good quality coating lies in the preparation of the surface. It is essential that this is free of grease, dirt and scale before galvanising takes place. Contamination is removed by a series of processes. Firstly, a degreasing procedure is carried out which involves the dipping of the component into a caustic solution. Heavily soiled material may also be cleaned manually.
- Acid Pickling – This is done to prepare the surface of the work through removal of rust and scale. This is carried out by dipping into our pickling baths, which contain up to 15% concentration of hydrochloric acid (HCl) and are located in a pre-treatment bund.
- Rinsing – Or, removal of the hydrochloric acid that has adhered to the surfaces of the steel articles. This prevents the carryover of iron salts on the surface of the metal which would cause the formation of additional dross to in the zinc bath. Once the HCl concentration of the rinse water becomes too high, it is removed from site for waste disposal.

- Fluxing – Carried out in a bath of zinc salt (called zinc ammonium chloride), this prevents any oxidation of the metal surface before it is galvanised. It also enables the zinc to wet the surface of the steel, allowing a uniform coating of zinc to be achieved. The flux bath is maintained at 65-80°C.
- Galvanising – The cleaned iron or steel components are dipped into the molten zinc (at 450°C). A series of zinc-iron alloy layers are formed through metallurgical reactions between the iron and zinc. Upon withdrawal from the galvanizing bath, a layer of molten zinc will be taken out on top of the alloy layer. This cools to exhibit the bright shiny appearance associated with galvanized products. During dipping, the zinc bath is totally enclosed with the only openings being for the extract ducting, crane cables and door seals. Fumes created during the dipping process are extracted and vented through an automatic reverse jet type bag filter before being vented to the atmosphere through a 0.9m diameter stack at an elevation of 14m.
- Storage and Handling of Finished Products - All storage areas of finished products are located on a hard standing, impermeable concrete surface.
- Stripping – An additional stage of the process is called stripping. This is required on occasions in order to remove coatings that do not meet the required standard or to remove previously coated material. The stripping tanks, which have a much lower concentration of HCl (<5%) are contained within a reinforced concrete bund lined with an internal acid resistant fibreglass.
- Passivation – The finished product is immersed in a designated tank. The purpose of post treatment passivation/water quench is mainly for aesthetic purposes by applying a light coating to the galvanized surface in order to prolong the bright shiny appearance of the finished product.

1.4 Environmental Health & Safety Policy

At Galco, we are committed to protecting the Environment, Health, Safety and Welfare of our employees, customers, visitors and the community within which we operate so far as is reasonably practicable. The Environmental and Health & Safety Policy is devised by paying consideration to the external and internal issues referred to in clause 4.1 and the requirements of the relevant interested parties referred to in 4.2

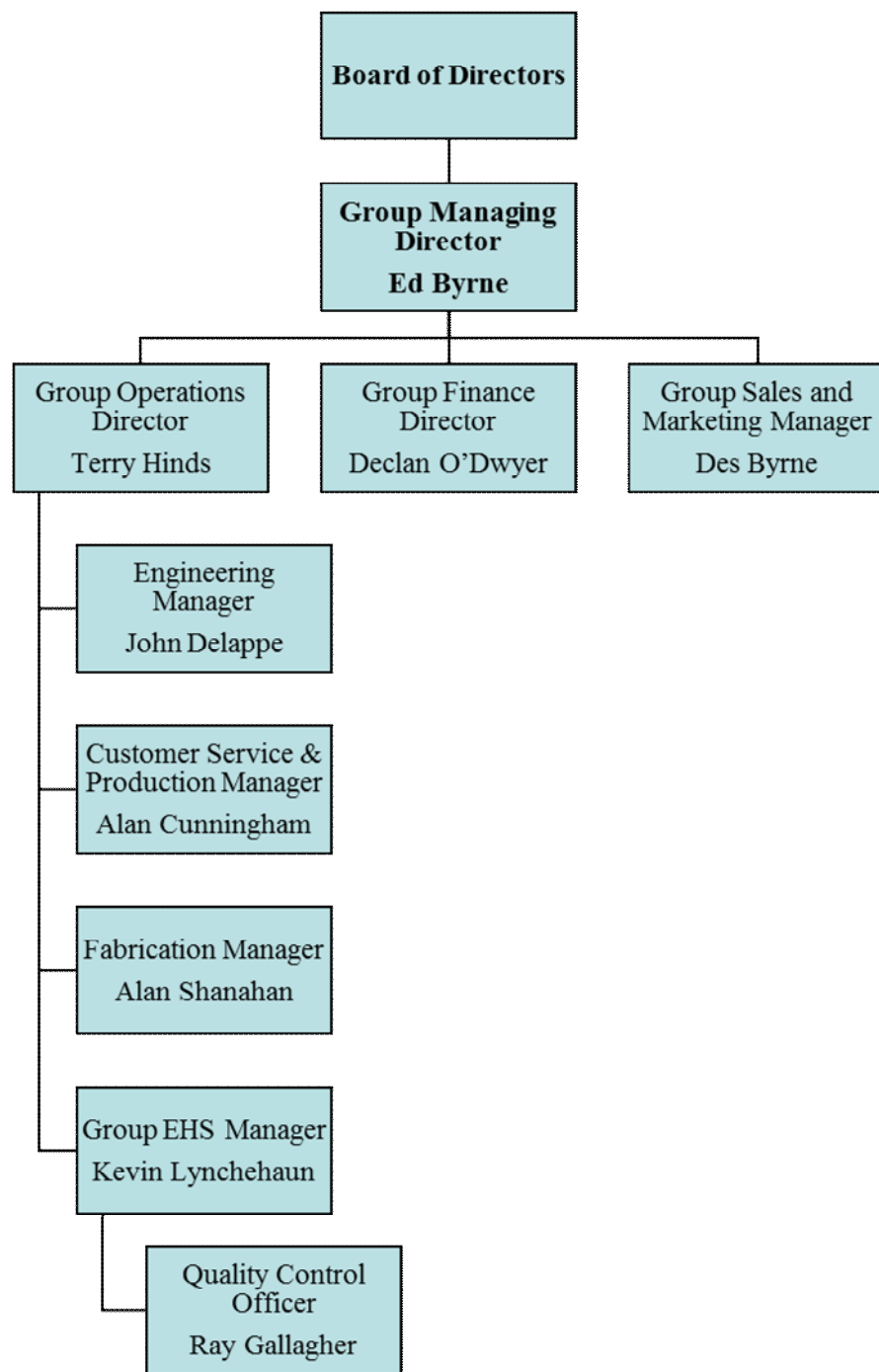
Galco seek to be recognised in the galvanising industry as a leader in terms of Environmental Health & Safety (EHS) care. EHS management programs are integrated into all aspects of our business and focus on continuous improvement, involvement at all levels of the organisation and striving to achieve sustainable development. The EHS management program in Galco is committed to the following basic principles in managing our businesses;

- Full compliance with applicable EHS Laws & Regulations.
- Continual improvement in EHS performance through periodic evaluation on a quarterly basis with the ultimate goal being commitment to prevent injuries and ill health and preventing pollution.
- Establish EHS goals and objectives on an annual basis and review quarterly or after an accident or change in process.
- Support research, training or agencies engaged in EHS matters.
- Maintain communication, participation and consultation to ensure employees, communities and other interested parties are informed on EHS matters.
- Develop employee EHS awareness through ongoing relevant training programs.
- Management led audits and reviews of procedures and practices.
- Maintain availability of EHS documentation.
- Improving energy efficiency and improving methodologies with the goal of Reduce, Reuse & Recycling and the use of safer substitute materials within the process.

Galco Senior Management promotes EHS leadership, responsibility and innovation. Senior management will lead the development and implementation of management programs, policies, audits, compliance monitoring, supervision of the EHS management system and provide public access to relevant EHS information.

Overall, Galco is committed to improving our EHS standards, culture and performance and will transparently report our performance goals and metrics and will ensure that the EHS Policy is being adhered to.

1.5 Organisational Chart



2.0 ENVIRONMENTAL MONITORING

2.1 Emissions to Sewer

This section provides information pertaining to the annual emissions to Sewer. This data is based on the monitoring data available for the operation. As detailed in Condition 6, Emissions to Sewer of the IPC licence, there are a number of requirements which provide protection for the environment by way of control, limitation, treatment and monitoring of emissions. Also, it helps us adhere to the requirements of the Sanitary Authority, in accordance with section 97 of the EPA Act, 1992.

It should be noted that all equipment, including backup equipment, specified in *Schedule 2(ii) Effluent Treatment Control* are provided on site and all are maintained and calibrated on at least an annual basis or as required.

Table 1: Monitoring of Emissions from Waste Water Treatment Plant (F1)

Summary

There were no non compliances in any parameters monitored for sewer in 2018 as there were no sewer emissions for this period.

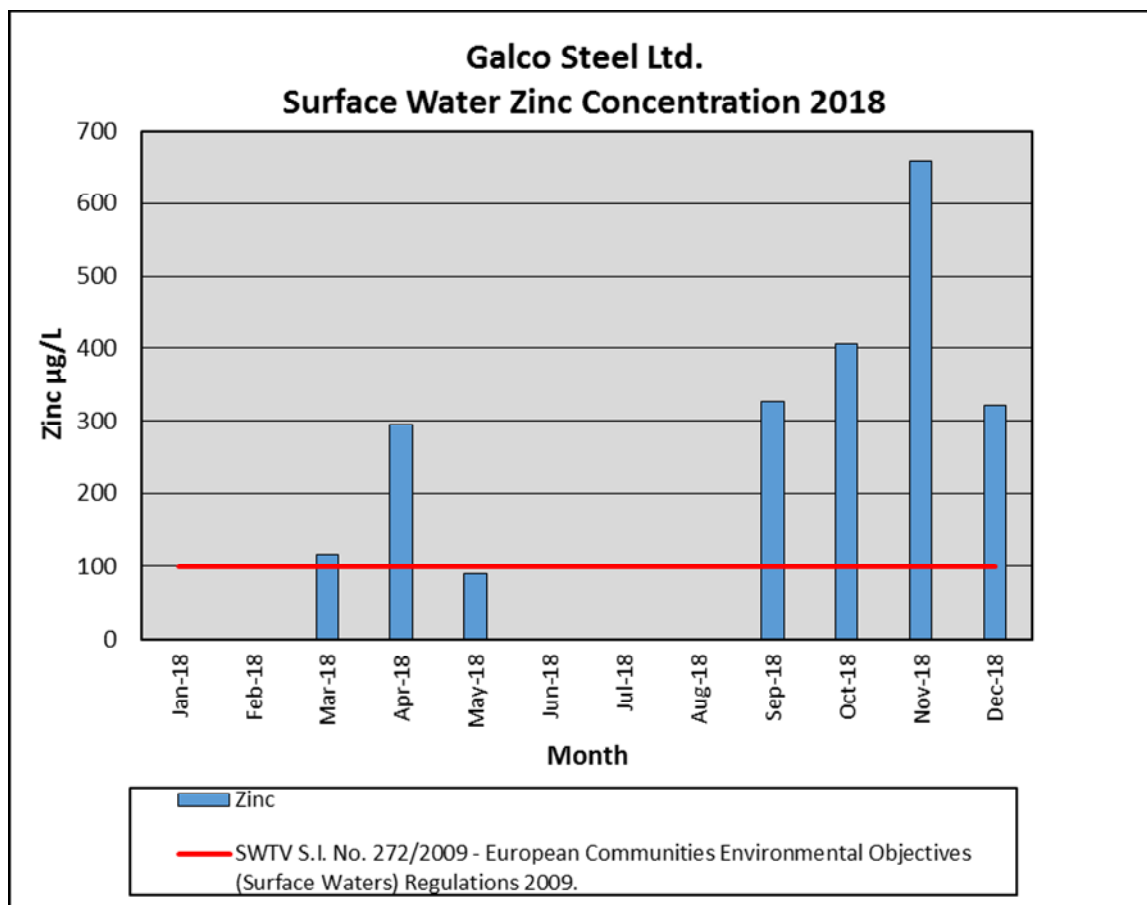
2.2 Surface Water

This section provides information pertaining to surface water discharge from the site. This data is based on the monitoring data available for the operation as specified in *Schedule 4(i) Surface Water Discharge Monitoring*.

Table 2: Surface Water Monitoring Results (Emission Point SW1)

Date	pH	COD, mg/L	Iron, µg/L	Zinc, µg/L
January	-	-	-	-
February	-	-	-	-
March	7.24	71	156	116
April	6.54	-	-	295
May	7.58	39	557	91
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	46	-	327
October	7.35	35	2523	405
November	7.45	42	2836	657
December	-	48	-	322

The surface water results for the parameter Zinc are also presented in the graph on the following page. The environmental quality standard included for comparison is the Surface Water Threshold Value (SWTV) of 100 µg/l Zn as set out in the Environmental Objectives (Surface Waters) Regulations 2009, as amended

Graph 1: Surface Water Zinc Monitoring Results (Emission Point SW1)

Summary

The environmental quality standard for comparison is the Surface Water Threshold Value (SWTV) of 100 µg/l Zn as set out in the Environmental Objectives (Surface Waters) Regulations 2009, as amended. The concentration for the parameter zinc was above the SWTV of 0.1mg/l on six occasions. However a separate compliance investigation discussing why the SWTV for zinc of 0.1mg/l should NOT apply at the end of pipe leaving the site but on what impact the run off has on the receiving watercourse was performed. The compliance investigation has proven the run off to be of a negligible impact on the receiving watercourse from the AWN Consulting Report on SW.

2.3 Air Emissions

This section provides information pertaining to the annual emissions to the atmosphere. This data is based on the monitoring data available for the operation. As detailed in Condition 5, Emissions to Atmosphere of the IPC license, there are a number of requirements regarding the provision of environmental protection. These are the control, limitation, treatment and monitoring of atmospheric emissions.

It should be noted that all equipment, including backup equipment, specified in *Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control* are provided on site and all are maintained and calibrated on at least an annual basis or as required.

Annual monitoring of the bag filter units, while annual monitoring of the boilers takes place also. This is as specified in *Schedule 1(iii) Monitoring of Emissions to Atmosphere* of the IPC license. The tables below include yearly figures that are based on the results obtained for each emission point. All figures are based on average data and do not represent either the best or worst case scenario.

A summary of the annual emission data was submitted electronically in accordance with the AER Electronic Reporting System & EPR Requirements.

Table 3: A2-1 Bag Filter Monitoring Results 2018

Parameter	Limits	Summary Results mg/m ³
Particulate Matter	5 mg/m ³	2.36
Lead	2 mg/m ³	0.0272
Zinc	5 mg/m ³	0.728
Cadmium	0.5 mg/m ³	0.0029
Chloride (As HCl)	30 mg/m ³	9.68
Ammonia	-	1.80
Volumetric Flow	35,000 NM ³ /hr	5871

Summary

There was no non-compliance for emissions to atmosphere at emission point bag filter A2-1 in 2018.

Table 4: Monitoring of Emissions from Stack A1-1

Parameter	Units	2018
Combustion Efficiency	%	84.7
Nitrogen Dioxide	mg/Nm ³	94.1

Summary

There were no non compliances recorded for any parameter monitored for A1-1 in 2018.

Table 5: A2-2 Bag Filter Monitoring Results 2018

Parameter	Limits	Summary Results mg/m ³
Particulate Matter	5 mg/m ³	0.38
Lead	2 mg/m ³	0.1291
Zinc	5 mg/m ³	0.6131
Cadmium	0.5 mg/m ³	0.00130
Chloride (As HCl)	30 mg/m ³	0.35
Ammonia	-	1.02
Volumetric Flow	35,000 NM ³ /hr	13715

Summary

There was no non-compliance for emissions to atmosphere at emission point bag filter A2-1 in 2018.

Table 6: Monitoring of Emissions from Stack A1-2

Parameter	Units	2018
Combustion Efficiency	%	88.2
Nitrogen Dioxide	mg/Nm ³	72.5

Summary

There were no non compliances recorded for any parameter monitored for A1-1 in 2018.

2.4 Energy and Water Consumption

This section provides information pertaining to the annual consumption of energy and water for the operation. The data is based on bills received for each of the energy related items.

Table 5: Energy Consumption

Parameter	Units	Annual
Water (Process)	m ³	3000
Water (Office)	m ³	150
Electricity	kWh	804,734
Natural Gas (total)	kWh	6,867,892
Diesel (forklift + truck)	Litres	43,846 Forklift
		44,527 Truck
Gas Oil	Litres	0
CO2 Mass Emissions (0.234 kg CO2/kWh)	kg/Year	1,795,394.484

2.5 Waste Management

A summary of the annual waste disposal data was submitted electronically in accordance with the AER Electronic Reporting System & PRTR Requirements.

2.6 Noise

The biennial environmental noise survey was carried out as per the noise guidance. Noise levels were determined at five locations. Analysis of the results from this noise survey indicates that the noise levels at the noise sensitive receptor are not adversely impacted upon by the site related activities as shown below. The next survey is due 2019.

Table 6: Day Time Noise Survey Results

Noise Location	Survey Date and Time	L _{Aeq} dB	L _{A10} dB	L _{A90} dB	Tonal*
<i>Day-time Noise Monitoring Results</i>					
N1	06/12/2017 11.00-11.15	61.2	61.5	48	160Hz
N2	06/12/2017 11.15-11.30	60.1	62.3	55	No Tone
N3	06/12/2017 11.30-11.45	65	66	49.6	160Hz & 250Hz
N4	06/12/2017 11.45-12.00	55.2	61.2	47.3	160Hz
NSR1-1	06/12/2017 12.15-12.30	64.5	66.3	52.1	160Hz & 250Hz
NSR1-2	06/12/2017 12.45-13.00	59	60	51	No Tone
NSR1-3	06/12/2017 13.15-13.30	62.3	62.3	51.2	160Hz & 250Hz

Table 7: Evening Noise Survey Results

Noise Location	Survey Date and Time	L_{Aeq} dB	L_{A10} dB	L_{A90} dB	Tonal*
<i>Evening Noise Monitoring Results</i>					
NSR1-1	06/12/2017 20:00-20.15	55.2	58.2	50.3	1KHz
NSR1-2	06/12/2017 20:30-20.45	58.2	59.3	50.0	160Hz & 250Hz
NSR1-3	06/12/2017 21:00-21.15	54.2	58.3	49.3	250Hz

2.7 Groundwater Monitoring

The biannual groundwater monitoring results are shown in the tables below.

Table 8: BH1 and BH2 Results

Laboratory Test Results Client: Galco Steel (Dublin) Location: Ballymount Road, Dublin 12 AWN Ref: Groundwater Monitoring (to November 2018) Ref: 18/10112																						
Sample ID					BH1								BH2									
Laboratory	Details				JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	JEL	
Sample Type					Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Sample Date					11/09/2014	03/12/2014	23/06/2015	10/09/2015	09/09/2016	07/06/2017	20/10/2017	16/04/2018	27/11/2018	11/09/2014	03/12/2014	23/06/2015	10/09/2015	09/09/2016	07/06/2017	19/10/2017	16/04/2018	27/11/2018
Parameters	Units	MDL	GTV (Groundwater)	IGV (Groundwater)																		
Anions & Cations																						
Chloride as Cl	mg/l	0.3	187.5	30	<u>33.2</u>	25.8	<u>62.0</u>	43.2	<u>45.6</u>	<u>55.2</u>	<u>42.7</u>	<u>34.9</u>	<u>92.3</u>	<u>38.0</u>	<u>62.3</u>	<u>97.8</u>	<u>61.4</u>	<u>102.5</u>	<u>38.0</u>	<u>52.0</u>	<u>392.8</u>	<u>42.0</u>
Iron, total dissolved	mg/l	0.02	<i>nv</i>	0.20	-	-	-	0.07	-	-	-	-	-	<u>1.083</u>	0.026	-	<u>2.621</u>	<u>2.692</u>	<u>2.516</u>	<u>2.550</u>	<u>3.456</u>	<u>1.38</u>
Heavy Metals																						
Manganese, dissolved	mg/l	0.002	<i>nv</i>	0.05	<u>0.292</u>	0.012	0.004	<u>0.102</u>	<u>0.077</u>	<u>0.391</u>	0.04	0.006	<u>0.47</u>	<u>1.181</u>	0.037	<u>1.407</u>	<u>1.298</u>	<u>1.351</u>	<u>1.081</u>	<u>1.15</u>	<u>2.719</u>	<u>0.673</u>
Zinc, dissolved	mg/l	0.003	0.075	0.10	<u>0.37</u>	<u>0.225</u>	<u>0.203</u>	<u>0.172</u>	<u>1.212</u>	<u>1.352</u>	<u>0.51</u>	<u>0.25</u>	<u>0.703</u>	<u>0.20</u>	<u>0.27</u>	0.06	0.02	<u>0.088</u>	0.045	<u>0.090</u>	<u>0.173</u>	<u>0.014</u>
Nutrients																						
Ammonia, total as NH4	mg/l	0.03	<i>nv</i> ⁽¹⁾	<i>nv</i>	0.04	0.05	0.08	0.07	0.06	2.24	0.15	-	1.26	0.32	0.26	0.36	0.30	0.32	0.19	0.20	0.12	0.14
Other																						
COD (settled)	mg/l	<7	<i>nv</i>	<i>nv</i>	14.0	-	-	31	20	15	-	-	-	18	-	-	18	10	8	11	13	-
Electrical Conductivity @ 25C	uS/cm	<2	(800 or 1875)	1000	726	615	707	609	576	564	684	637	645	470	553	667	562	733	421	471	<u>1.404</u>	424
pH	pH units	<0.01	<i>nv</i>	≥6.5 and ≤9.5	7.43	7.42	7.43	7.14	7.42	7.26	7.26	7.04	7.86	7.53	7.45	7.31	7.15	7.47	7.22	7.31	6.96	7.85
Key BOLD Value exceeds the Groundwater Guideline Value (Groundwater) Note 1 Reference: Ammonium under SI No. 366 of 2016 range is 65 - 175ug/l N (i.e. 0.065-0.175mg/l N) <u>Underlined</u> Exceeds the IGV for Groundwater GTV Groundwater Threshold Value Groundwater Regulations SI No. 9 of 2010; Groundwater (Amendment) Regulations, SI No. 366 of 2016, IGV Interim Guideline Value EPA Guidelines MDL Method Detection Limit <i>nv</i> No Value - Less than the MDL																						

2.8 Environmental Incidents

There were no environmental incidents in 2018 that would have an environmental consequence. Some zinc levels in the SW samples were above the EQS but not to have an impact on the receiving water course.

2.9 Environmental Complaints

There were no environmental complaints in 2018.

3.0 MANAGEMENT OF THE ACTIVITY

3.1 Environmental Objectives and Targets – GOALS FROM 2018

The following table summarises the objectives achieved to date:

Table 12: Environmental Management Programme (EMP) Report

<i>No.</i>	<i>Objective</i>	<i>Status</i>
1	Commissions AWN Consulting to carry out a full site wide source investigation into surface water run off to identify hot spots in relation to any areas of elevated zinc entering surface water	Complete
2	Commission RILTA Environmental to carry out a full CCTV survey of the sub surface drains to establish the integrity of them.	Complete
3	Depending on the results of the CCTV survey above carry out an audit on high priority remedial works if needed	Complete
4	Commission a hazardous waste contractor to ensure the interceptor is emptied and functioning	Complete
5	Complete the ELRA and CRAMP Documents	Complete
6	Carry out a waste audit and ensure all waste is removed from site within 6 months of generation	Complete
7	Ensure the yard sweeper is operated on a daily basis and records kept for any anomalies in the zinc readings	Complete
8	Empty all bunds of rain water especially stripping, spent pickle and diesel.	Complete
9	Environmental Training is due to take place on for example chemical handling	Complete
10	Enforce Actions from the Metal Sector Enforcement Findings and Priority Issues for 2018.	Complete

3.2 Environmental Objectives and Targets – GOALS FOR 2019

The following table is a schedule of objectives and targets that have been set out by Galco Steel Ltd. for 2019, in order to reduce any environmental impacts and improve environmental practices.

Table 13: Schedule of Environmental Objectives and Targets for 2019

<i>No.</i>	<i>Objective</i>	<i>Target 2019</i>
1	Following an extensive CCTV survey. Identify any subsurface drains that may be in need of repair / replacement	Q1
2	Carry out any bund integrity assessments that may be due	Q2
3	Service of the flux treatment plant to ensure it is operating at full capacity to reduce the hazardous waste quantity for 2019	Q2
4	Review the SOP for yard sweeping and updating records of maintenance	Q2
5	Ensure low lying rainwater in bunds are removed as soon as practicable so not to render the capacity of the bund inadequate in the event of a spill	Q3
6	Carry out a waste audit and ensure all waste is removed from site within 6 months of generation. Ensure all waste is correctly categorised and all storage containers are UN approved	Q3
7	Clean the area around SW1 to ensure no ingress of zinc from the yard	Q1
8	Complete an emergency spill kit drill to ensure all members of staff are aware of the SOPs in the event of a spill	WIP
9	Environmental Training is due to take place on for example chemical handling	Q2
10	Enforce Actions from the Metal Sector Enforcement Findings and Priority Issues for 2018.	Q4
11	Ensure the GW well heads are in good condition	Q1

Environmental Performance Report

Profile No: P0284 Reporting Year: 2018 Report ID: LRD00051

Organisation	Site	Activities	Emissions	Waste	LCP	Submission
Final Treatment of Waste Generated Onsite		Transfers of Waste Generated Onsite		Final Treatment of Waste Accepted		Transfers of Waste Accepted

Transfers of Waste Generated Onsite ¹

During the reporting year, did you generate waste at your facility which you (then) transferred offsite for recovery/disposal?

Yes



Search...

Show 50 entries

Transferred Waste								
List of Waste (LoW)				Next Destination		Final Destination		
LoW Code	LoW Description	Classification	Quantity of waste Tonnes / year	Organisation	Waste Treatment Operation	Organisation	Waste Treatment Operation	Actions
11 01 05*	pickling acids	Hazardous	298.66	Enva Ireland Limited (Shannon) - W0041	R01 - Use principally as a fuel or other means to generate energy	-		
11 01 05*	pickling acids	Hazardous	23.12	Rilta Environmental Limited - W0192	R06 - Regeneration of acids or bases	TIB Chemicals AG	R06 - Regeneration of acids or bases	
11 05 02	zinc ash	-	96.76	FBM Metals	R04 - Recycling/reclamation of metals and metal compounds	-		
11 05 01	hard zinc	-	196.49	FBM Metals	R04 - Recycling/reclamation of metals and metal compounds	-		
11 05 99	wastes not otherwise specified	-	9.58	Rilta Environmental Limited - W0192	R01 - Use principally as a fuel or other means to generate energy	-		
11 01 07*	pickling bases	Hazardous	87.54	-		Irish Waste Services Limited	D09 - Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)	
11 01 11*	aqueous rinsing liquids containing hazardous substances	Hazardous	21.36	Enva Ireland Limited (Shannon) - W0041	D09 - Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)	-		

Profile No: P0284 Reporting Year: 2018 Report ID: LRD000517