IMPACT ASSESSMENT TABLE: GM MOTORS PROJECT

	Pre-mitigation:								Post-mitigation:							
Impact	**Duration** 1,2,3,4	**Extent** 1,2,3,4,5,6	**Severity** -3,-2,-1,0,1,2,3	**Impact on irreplaceable resources** 0,1	**Consequence** (Dur+Ext+Irr) x Sev	**Probability** 0,1,2	**Significance** -66 to +66	**Recommended Mitigation**	**Duration** 1,2,3,4	**Extent** 1,2,3,4,5,6	**Severity** -3,-2,-1,0,1,2,3	**Impact on irreplaceable resources** 0,1	**Consequence** (Dur+Ext+Irr) x Sev	**Probability** 0,1,2	**Significance** -66 to +66	**Confidence**
CONSTRUCTION PHASE																
Direct Impacts																
Contamination/Pollution of groundwater from leaks/spillages from hydrocarbons	4	3	-3	1	-24	1	-24	1. Provide drip-trays / or use other methods to reduce leaking of standing machinery/plant. 2. The machinery on site is not to be refuelled or serviced near natural areas. 3. Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately. 4. Provide solid waste disposal facilities (bins) and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal. 5. Ensure that any rubbish generated during construction as well as from employees (litter) is regularly cleared from the site, in particular from streams and wetlands. 6. Cement batching boards should be used and cement-based products/wash not to be disposed of into the natural environment. 7. Sanitation – portable toilets (1 toilet per 30 users is the norm) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor. 8. The proper storage and handling of hazardous substances (hydrocarbons and chemicals) needs to be administered during construction. 9. Construction materials liable to spillage need to be stored in appropriate containment structures (e.g. drip-trays or concrete bunded areas). 10. Appropriate methods should be employed to prevent wash of any contaminated materials into watercourses.	2	2	-2	1	-10	1	-10	
Noise impact as a result of the use of construction machinery on site	2	2	-1	0	-4	2	-8	1. Limit the amount of construction vehicles on site. 2. Maintain construction vehicles and machinery in good working order to reduce the noise on site 3. Equipment should be fitted with noise reduction devices.	2	2	-1	0	-4	1	-4	
Increased job opportunities for unskilled labour	3	3	2	0	12	2	24	1. Meet the requirements of the government policies for procurement and employment, as are applicable to local government, to take care of and avoid potential conflict between people in the immediate surroundings seeking employment and those from elsewhere.	3	3	3	0	18	2	36	
Indirect impacts																
Impact of improper waste management on site	3	3	-2	0	-12	1	-12	1. Identify disposal sites for the various categories of waste likely to be generated on site. 2. Make sure general cleanliness on site 3. Reduce, recycling and reuse of waste must occur whenever possible. 4. Recycling bins must be separate and clearly marked according to material 5. Waste must be stored safely away from employees' and residents' exposure. 6. Construction debris is not to be buried on site. 7. No burning of waste will occur on site, unless to remove alien seeds from storage sites.	2	2	-1	1	-5	1	-5	
Cumulative Impacts					0											
Increase in alien vegetation	3	3	-2	1	-14	2	-28	1. Any exotic vegetation (trees and plants) encountered should be removed from the site and properly disposed of. 2. All bare surfaces across the construction site must be checked for alien plants at the end of every week and alien pants removed by hand pulling and adequately disposed. 3. Rehabilitate/Plant disturbed areas with natural/indigenous plants. 4. Compilation of a Environmental Management Programme (EMP) that specifies these mitigation measures.	3	3	-2	1	-14	1	-14	
OPERATIONAL PHASE																
Direct Impacts																
Contamination/Pollution of groundwater from leaks/spillages from hydrocarbons	4	3	-3	1	-24	2	-48	1. Provide adequate bunding for the above ground storage tanks. 2. Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately.	2	2	-2	1	-10	1	-10	
Contamination/Pollution of soil from leaks/spillages from hydrocarbons	4	3	-3	0	-21	2	-42	1. Provide adequate bunding for the above ground storage tanks. 2. Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately.	2	2	-1	0	-4	1	-4	
Increased air emissions as a result of storing dangerous goods	2	3	-1	0	-5	2	-10	1. Ensure staff use correct PPE when filling/emptying tanks 2. Ensure that tanks are efficiently sealed. 3. Tanks to be fitted with breather pipes. 4. Vent pipes to be fitted such that they face away from the neighbouring residential areas.	2	3	-1	0	-5	1	-5	
Indirect impacts																
Impacts to health and safety as a result of fire risk	4	2	-2	1	-14	2	-28	1. Monitor the route for a one year period afterwards, at six month intervals, and destroy any alien species that establish within the construction footprint. Best practice will involve herbicide treatment or herbicide treatment following cutting of stumps or frilling of non-herbaceous alien plants, not cutting alone. 2. Where construction encroaches into open space areas, destroy all alien species within 30 metres of the footprint during or by the end of construction and allow follow up annually for two years.	4	2	-2	1	-14	1	-14	
Cumulative Impacts																
None																
DECOMMISIONING PHASE																

Contamination/Pollution of groundwater from leaks/spillages from hydrocarbons	3	3	-2	0	-12	1	-12	1. Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately. 2. Provide solid waste disposal facilities (bins) and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal. 3. The proper storage and handling of hazardous substances (hydrocarbons and chemicals) needs to be administered during decommissioning. 4. Decommissioning materials liable to spillage need to be stored in appropriate containment structures (e.g. drip-trays or concrete bunded areas). 5. Appropriate methods should be employed to prevent wash of any contaminated materials, into any watercourses.	2	2	-2	1	-10	1	-10	
Noise impact as a result of the use of construction machinery on site	2	2	-1	1	-5	2	-10	1. Informing surrounding businesses about the decommissioning and the expected duration thereof. 2. Decommissioning activities to occur during working hours only (8am- 5pm). 3. Contractors to be conscious of the noise generated during their decommissioning activities, and should limit excessive noise wherever possible. 4. Ear plugs and other applicable Personal Protection Equipment must be used by workers onsite, as required. • 5. The applicant will adhere to local authority by-laws relating to noise control.	2	2	-1	1	-5	1	-5	
Increased job opportunities for unskilled labour	3	3	2	0	12	2	24	1. Meet the requirements of the government policies for procurement and employment, as are applicable to local government, to take care of and avoid potential conflict between people in the immediate surroundings seeking employment and those from elsewhere.	3	3	3	0	18	2	36	
Indirect impacts																	
Impact of improper waste management on site	3	3	-2	0	-12	1	-12	1. Identify disposal sites for the various categories of waste likely to be generated on site. 2. Make sure general cleanliness on site 3. Reduce; recycle and reuse of waste must occur whenever possible. 4. Recycling bins must be separate and clearly marked according to material. 5. Waste must be stored safely away from employees' and residents' exposure. 6. Decommissioning debris is not to be buried on site. 7. No burning of waste will occur on site, unless to remove alien seeds from storage sites.	2	2	-1	1	-5	1	-5	
Cumulative Impacts					0												
Impact of improper handling of UST removal	3	2	-2	1	-12	2	-24	1. Ensure fuel has been removed from the UST. 2. Pipes and vents must be disconnected and removed before the tank is lifted. 3. The UST must be securely fastened before transportation via truck from the site	3	2	-1	1	-6	1	-6	

Duration		Extent		Irreplaceble Resources		Severity			Probability		Consequence = (Duration+Extent+Irr) x Severity		Significance		Confidence
1	Temporary	1	Footprint	1	Yes	-3		High - negative	0	Improbable	-25 to -33	Extremely detrimental	-49 to -66	Very high - negative	Low
2	Short term	2	Site	0	No	-2		Moderate - negative	1	Probable	-19 to -24	Highly detrimental	-37 to -48	High - negative	Medium
3	Medium term	3	Local			-1		Low -negative	2	Definite	-13 to -18	Moderately detrimental	-25 to -36	Moderate - negative	High
4	Long term	4	Regional			0		Negligible			-7 to -12	Slightly detrimental	-13 to -24	Low - negative	
		5	National			1		low -positive			0 to -6	Negligible	0 to -12	Very low - negative	
		6	International			2		moderate - positive							
						3		high - positive			0 to 6	Negligible	0 to 12	Very Low - positive	
											7 to 12	Slightly beneficial	13 to 24	Low - positive	
											13 to 18	Moderately beneficial	25 to 36	Moderate - positive	
											19 to 24	Highly beneficial	37 to 48	High - positive	
											25 to 33	Extremely beneficial	49 to 66	Very high - positive	

Criteria	Rating Scales	ELU Rating	ELU Notes	Notes		Nuclear-1	Original GIBB Methodology
Nature	Positive	Postive	this is an evaluation of the effect of the impact related to the proposed developmen	This is an evaluation of the type of effect the construction, operation or decommisiong of the proposed development would have on the affected environment.			
	Negative	Negative					
	Neutral						
Extent	Footprint	Footprint	the impact only affects the area in which the proposed activity will occur (e.g. construction of a pump station)	The impacted area extends only as far as the activity, such as footprint occuring within the total site area.		Site-specific, affects only the development footprint	• Local (site-specific and/or immediate surrounding areas)
		Site	the impact will affect only the developmen t area				
	Site	Local	the impact affects the developmen	The impact could affect the whole or a significant portion of the site.		Local (limited to the site and its immediate surroundings, including the surrounding towns and settlements within a 10 km radius);	• Regional (Gauteng)
		Regional	the effect of the impact extends				
		National	the effect of the impact extends				
	Regional	Internation al	the effect of the impact extends beyond country borders	The impact could affect the area including the neighbouring farms, the transport routes and adjoining towns or cities.		The impact could affect the area including the neighbouring farms, the transport routes and adjoining towns or cities.	• National or beyond
		Temporar y	the duration of the activity associated with the impact will last 0-6 months	The impact will be relevant through to the end of the construction phase.		0-3 years (i.e. duration of the construction phase)	• Short-term (0 to 5 years)
	Low	Short term	the duration of the activity associated with the impact will last 6-18 months				

Duration	Medium	Medium term	the duration of the activity associated with the impact will last 18 months-5 years	The impact will last up to the end of the development phases, whereafter it will be entirely negated.		4-8 years	• Medium term (6 to 15 years)
		Long term	the duration of the activity associated with the impact will last more than 5 years				
				The impact will continue or last for the entire operational lifetime of the development.		9 years to permanent	• Long term (16 to 30 years) - where the impact will cease after the operational life of the activity either because of natural processes or by human intervention
Severity	Neutral	low	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected		Low: Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected
	Moderate	moderate	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected		Medium: Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected
	High	high	Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily	Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease; and valued, important, sensitive or vulnerable systems or communities are substantially affected.		High: Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease; and valued, important, sensitive or vulnerable systems or communities are substantially affected.	Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease; and valued, important, sensitive or vulnerable systems or communities are substantially affected.
Potential for impact on irreplaceable resources	No			No irreplaceable resources will be impacted.			No irreplaceable resources will be impacted.
	Yes			Irreplaceable resources will be impacted.			Irreplaceable resources will be impacted.
Consequence	Extremely detrimental			A combination of extent, duration, intensity and the potential for impact on irreplaceable resources.			
	Highly detrimental						
	Moderately detrimental						
	Slightly detrimental						
	Negligible						
	Slightly beneficial						
	Moderately beneficial						
	Highly beneficial						
	Extremely beneficial						
Probability (the likelihood of the impact occurring)	Improbable			It is highly unlikely or less than 50 % likely that an impact will occur.		Low: It is highly unlikely or less than 50 % likely that an impact will occur.	• Improbable – where the possibility of the impact occurring is very low
	Probable			It is between 50 and 70 % certain that the impact will occur.		Medium: It is between 50 and 70 % certain that the impact will occur.	• Probable – where there is a good possibility (<50 % chance) that the impact will occur
							• Highly probable – where it is most likely (50-90 % chance) that the impact will occur
	Definite			It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.		High: It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.	• Definite – where the impact will occur regardless of any prevention measures (>90 % chance of occurring) r.
Significance	Very high - negative			A function of Consequence and Probability			
	High - negative						
	Moderate - negative						
	Low - negative						
	Very low						
	Low - positive						
	Moderate - positive						
	High - positive						
	Very high - positive						